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CRIMINAL RESPONSIBILITY OF INDIVIDUALS AND INTERNATIONAL LAW*

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I. THE DEVELOPMENT OF CRIMINAL RESPONSIBILITY

THE element of responsibility occupies a singular place in all systems of criminal justice. It appears at every stage of their development: sacrificial execution, offhand popular vengeance, patriarchal paternal power, private self-help, magisterial discipline, or the advanced stage of legislative justice.[1] Criminal responsibility is concerned with a problem of artificial rather than causal relevance, and need not be based upon the intent of the "cul-prit."[2] Thus, "a person is held responsible when the enlightened public opinion of his age and country demands that he shall be made to suffer in return for pain that he has inflicted."[3]

Generally we speak of a "development" or "evolution" of the criminal law from the collective (vicarious) responsibility of the primitive community and clan to the individual responsibility of a few, selected (or "found out") with the aid of ever more modernized tools of criminal science or criminology. Collective responsibility may entail destruction of the whole family of the offender, or the retaliatory measures of the primi-

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[1] Roscoe Pound, Criminal Justice in America 56 (1930).

[2] It will be recalled that the word "culprit" originated from the *crown's reply* to the "not guilty"-plea of the indicted, the abbreviated Latin *cul. pri.* for the English equivalent "ready to prove guilty." Kinney, Law Dictionary and Glossary 213 (1893).

[3] Charles Mercier, Criminal Responsibility 40–41 (1935).

tive blood feud. Retaliation may also become more specific in the form of a *lex talionis*, or again the last shred of humanity might be torn away in the practices of southeastern Asian head-hunting tribes. At this early stage, the failure to distinguish between accident and design is almost inevitable. But in a more advanced period, e.g., Deuteronomy, appoints a city of refuge for the killer by accident, the code of Hammurabi permits him to escape capital punishment by the murder fine, and Germanic law substitutes the *wer* for the blood feud in cases of unintentional homicide.[4]

Religious beliefs play a very direct role in humanizing the process of criminal law. From the theory of witchcraft and possession which prevails among the savages, there leads a path to the punishment of animals and inanimate objects, to modified forms of personal vengeance, and to the utilization of punishment for the protection and promotion of social relationships. Faith in ultimate religious sanctions also permits the eventual adoption of the principle of composition, the common pecuniary liability mentioned above.

It has been observed that "developed" primitive legal systems seemed to consist mainly of "civil law."[5] One would be equally justified in stating, however, that all primitive legal systems consist of both "civil" and "criminal law" and that whatever civil law comes to exist originated from the early criminal law. What we are accustomed to call "civil law" today prevails over primitive criminal law as soon as pecuniary fines and restitution are introduced. Henceforth criminal law is, so to speak, contained in the civil law until such time as the two are separated, at first imperfectly, later (as only the western European systems achieved it since the Renaissance) perfectly. Predominance of the civil law over the primitive criminal law coincides with the assumption by communal heads and agents of the authority to mete out punishment. The extent to which private vengeance and (centrally) "unauthorized" violence are thus eliminated, determines the cultural progress and maturity in organization of the community concerned.

But numerous writers have pointed out that "the principle of collective responsibility [first encountered in the early criminal law] does not necessarily disappear with the rise of public justice under central authority. It lingers on, partly through sheer conservatism, but also in many cases for political reasons, to a later date."[6] In fact, in one department of all de-

[4] Cherry, "Evolution of Criminal Law," in Kocourek and Wigmore, eds., Evolution of Law vol. II: Primitive and Ancient Legal Institutions 138–44 passim (1915).

[5] Malinowski, Crime and Custom in Savage Society 58 (1926).

[6] Cherry, op. cit., p. 143.

veloped legal systems, namely that of public and international law, it is never abandoned. The corporate responsibility of civil law relates to the collective responsibility stage of the pecuniary fine rather than to the more primitive one of the blood feud. Collective responsibility of the latter kind is employed, however, in warfare permitted by international law.

While primitive criminal law is naught but unadulterated vengeance and "penal law" the body of rules imposing various forms of composition of the injuries as penalties, developed ("real") criminal law has two different characteristics: it deals only with individual natural persons; and it involves an element of public condemnation in the specification of *crimina*.[1]

The superstitious Greek connection between a primitive idea of sin and an indiscriminate array of wrongs was overcome by the late Roman republic and empire. A great Roman achievement was the better classification of offenses. But since severe wrongs continued to be repressed politically, either by some quasi-judicial process or proscriptions, no neat doctrine of individual responsibility was required. And as regards the classical *privata delicta*, an individual *criminal* responsibility could not be distinguished (if it was at all meant to exist) in the civil law.

Along with the archaic notion of the Greeks and Romans that the punishment of crimes belonged to the general assembly of freemen, the doctrine had grown that responsibility simply meant liability of the wrongdoer to the vengeance of his fellows. The Church, on the other hand, fell heir to the tradition of Stoicism, in which many inarticulate religious and ethical elements had been preserved from earlier periods. Ecclesiastic lawyers were therefore the first to introduce into criminal responsibility the idea of need for expiation of a sin committed against the commandments of God. After deepening the doctrine of criminal responsibility in the provinces of the Roman empire, the Church influence made itself felt among the Franks soon after Clovis' espousal of Christianity in 496, and in due time also reached England. In what was later to become the sphere of criminal law, the worldy legal and the ethical-moral were well on their way to a complete fusion.

The early Church had taught that states became necessary and were instituted as a result of the Fall. But now the ecclesiastic-political doctrine began to be developed that the state was a divine institution, and this was

[1] The ends of criminal law can only be served by inflicting upon a guilty individual either exemplary or remediative punishment, or both. Whatever is chosen, and however guilt is determined, the subject must always be a natural person.

As for "crimina," it should be noted that the term does not refer to "crimes," but to "accusations." Cf. 1 Stephen, A History of the Criminal Law of England 24 (1883); Mommsen, Römisches Strafrecht 9 ff. (1899).

confirmed in practice by the coronation and consecration of the emperor through the pontiff. The statements of Paul in the New Testament concerning the Roman magistrates were replaced by references to the Old Testament where it spoke of the anointing of David. But the Church was unable to lend reality for long to the myth of a continued Roman empire of the world. If this had at any time been part of some definitely conceived policy, it was soon opposed by the fragmentary break-up of European society.

The limitations of locally administered justice led to a new development of the *poenae naturales*. These were not very different from the earlier concepts of Antiphon and Hippias and of Roman legal doctrine, and ecclesiastic authorities were not disposed to discourage even superstitious belief in such sanctions. On the other hand, the world-wide Church developed a more formal and unified canon law, from the *Decretum Gratiani* about 1140 to the papal decretals of Gregory IX (1234) and his successors, which possessed an elaborate penal law of its own. By the time of Innocent IV, the canonists had advanced the consistency and influence of their criminal rules sufficiently so that the Church could challenge the contradictory statements of the glossators.

Near the end of the thirteenth century, the advisory function of the Church in criminal matters had become indispensable everywhere. Where secular authorities alone were concerned with a wrong, they were eloquent on the divine ordination of their judicial office, they utilized the canonic methods of investigation and absorbed the ecclesiastic terminology into the vernacular language of the forum. When Boniface VIII, in 1302, put forward his claim to judicial omnipotence, the Holy See indeed possessed the better tools to rule. Sovereigns had a confused worldly law to work with, and could no longer represent, let alone defend, their *maiestas* without ecclesiastic support. In the realm of criminal law, the Church alone could determine the "evilness" of a wrong; the sovereign and his agents were mere deputies of the Church or the executors of the clerical judicial decisions. The only quarter which could effectively demonstrate its opposition to the papal claims was the quickly consolidating French state. Philip IV (the Fair) asserted the superiority of national-secular royal power over the (appelate) judicial power of the pontiff.

The universal influence of the Church during the early Middle Ages had rested on the absence of a regular state, the substitute ideal of a world empire based on faith, and the simplicity of social and economic conditions. Eventually, the rise of a number of national states and the growth of social relationships which were more than a match for ecclesiastic controls

brought about the crisis for the medieval Church. National lay influence made itself felt in the *ecclesiae*, and sects were formed. Then the princes concluded concordats with the Holy See and divided the ecclesiastic power in their domain with the pope. The Church widened the scope of lay activities in its organization, and it developed the doctrine of the poor and only spiritual church. But its centralization in the papacy and the conclusion of the concordats enhanced the growth of national states.

Despite the decline of the pervasive judicial power of the pope, wrongs continued to be considered "crimes" when the late medieval Roman-canon law deemed them to be "sins." The theological doctrine of "sin," specifically in the form adopted by the canon law, had originally formed the matrix for the development of what ultimately became the modern criminal responsibility of individuals.[8] In the sixteenth century, the formulation of this doctrine reached a significant stage, heralded by the resolutions of the Council of Trent. The principal points at issue may be mentioned briefly.

Pelagius (ca. 360–420) had insisted on the fact of the moral responsibility of the individual. To uphold this truth, he showed each sinful act to be a separate and isolated occurrence without peculiar effect upon the character of the doer. Pelagius denied the existence of sinful habit, and pictured the nature of individual responsibility as the power and obligation of every man to do right on all occasions. Unqualified free will and the possibility of sinlessness were the logical results of such reasoning. St. Augustine (354–430), due to his doctrine of imputation and his confusion of Original Sin with Original Guilt, was led to disregard voluntary consent of a person as an essential factor in guilt; he considered all men to be equally guilty. Augustine allowed full moral responsibility to Adam; but he held that all men were potentially in Adam, and, moreover, were Adam when he sinned!

The waywardness of Augustine's philosophy was corrected partly by the semi-Pelagian school, initiated by the Gallican monks (chiefly Johannes Ermitia Cassianus [?360–?435] of Massilia) and the clergy of Southern Gaul early in the fifth century. The semi-Pelagians recognized the full moral responsibility of the individual; each man is condemned by his conscience for every sin as if it were his sole creation. But according to this view, man did not possess the power to do right and abstain from sin un-

[8] "Sin" occupied exactly the place of the modern *culpa* ("guilt") in the technical criminal law, although nowadays the *content* of the term has been changed from a moral-ethical to a social-psychological one. Cf. 2 Austin, Lectures on Jurisprudence 1057, note (5th ed., 1885). J. Grimm even connected the German *Sünde* with *culpa*. Cf. 1 Müller, The Christian Doctrine of Sin 89, n. 3 (trans. from 5th German ed. by William Urwick, 1868).

der all circumstances and regardless of his previous history. Moral responsibility was taken to mean rather the power to *desire* and to *endeavor* to do right, however unsuccessful the attempt might turn out.

St. Thomas Aquinas (1225–74) in the main espoused Augustinianism. But since he had "to find a niche for Aristotle in the temple of God,"[9] Aquinas admitted natural virtues even in the heathen, and tended toward a more liberal view of human nature in general. Throughout the Middle Ages the restlessness and dissatisfaction with Augustine's severe principles continued, and a strong current of opinion favored semi-Pelagianism. While the well-nigh semi-Pelagian canons, issued by the Council of Trent in 1546,[10] finally emerged as the guiding light of the Counter-Reformation, the Protestants returned to the Augustinian anthropology. Both Lutherans and Calvinists imputed such complete depravity to human nature that man could not but be inclined to evil; in their pronouncements it almost appeared as if "since the Fall the image of God is wholly obliterated in mankind."[11] It remained reserved to the emancipators of the late eighteenth and early nineteenth centuries to resolve "sin" into mere illusion and unreality, or to trace it to the will of man. Nevertheless, Spinoza (Baruch d'Espinosa, 1632–77) attacked the nature of evil from a purely metaphysical point of view almost a century before, and realist jurists at least equivocated or ignored, if they did not resolve, the problem of sin.

From his interpretation of the Sermon on the Mount, Luther had derived serious misgivings as to the permissibility of all jurisprudence. He calmed his fears with the argument that all human administration of justice was a necessary consequence of the Original Sin, and he merely demanded that the law be popular and intelligible. Calvin, trained jurist that he was, appreciated man-made law as an essential contribution to the governance of society according to Christian principles. Althusius evinced a singular appreciation of the ancient *ratio scripta*, and Melanchton almost identified the Roman law with the Decalogue. But the reintroduction of classical Roman law into the legal and political sciences of the Continent was accomplished by single Calvinist humanists, rather than by the Protestant spirit as such.

At a time when Protestantism still adhered to the traditional ecclesias-

[9] Moxon, The Doctrine of Sin 137 (1922).

[10] This statement applies more to the *effect* of the Tridentine canons in question than to the actual wording. Likewise, it can only be made concerning the treatment of free will by the council. As soon as the element of *grace* is mentioned, in others of the Tridentine canons, the views of St. Anselm, St. Augustine, and St. Thomas unquestionably reappear. Cf. The Catholic Encyclopaedia vol. XI, pp. 312–15 (1911).

[11] Moxon, op. cit., p. 167.

tic "natural law," the jurists developed a political "natural law" with their newly found classical tools. In the exact sciences, the discoveries of Copernicus (1473–1543), Kepler (1571–1630), Galileo (1564–1642), and Newton (1643–1727) taught the human mind to tread its own paths without the guiding hand of the Church. The law of causality held great appeal for the jurists and political philosophers who had become enamored with the rational elements of the Roman law; in the latter frame of reference it appeared applicable to societal relationships as well. The law of causality was therefore accepted as the all-embracing foundation of a new *Weltanschauung*. And when, during the Enlightenment, the distinction between community and individual came to be further clarified, the new learning was prominently reflected in the penology of Montesquieu, Beccaria, Bentham, and Feuerbach.

II. INDIVIDUAL AND CORPORATE RESPONSIBILITY

Since the fall of the Roman empire, juristic thought has alternated between the concept of a positive world law binding all men, as set forth most clearly by Gaius, but also by Ulpianus, and the concept of an international law binding only states as corporate entities. Both of these concepts, in Latin usage, came to be termed *ius gentium*. Moreover, both could be said to possess a natural-law basis. But the world-law concept (of Gaius and others) aimed at an organized *societas hominum*, and the almost exclusive and far-reaching employment of individual responsibility by this school was primarily designed to that end. Corporate-responsibility doctrines ultimately came to prevail, by and large, in the classical international law. In the following we shall characterize certain traits and tendencies in these developments.

Sovereigns and their agents had always enjoyed a large measure of immunity from the ordinary penal process. A certain tradition of individual responsibility, however, also developed in the public and international affairs of the western world. As *reatus maiestatis*, Henry the Lion was subjected to a feudal-penal process in 1180, which incidentally broke the power of the Guelfs and enabled the Staufer to orient German policy toward Italian enterprises. John Lackland was subjected not only to the feudal trial of 1202, but in all probability also to an *in contumaciam* conviction under the strict French penal law less than a decade later. It appears that Philip Augustus, King of France, wished to stamp John a common criminal (for the murder of Arthur) in order to ease French acquisition of British territory *exheridatione*.

On November 11, 1208, the Guelf Otto IV presided over the trial of

Otto von Wittelsbach who had assassinated the Staufer king, Philip of Suabia, the preceding June 21. Conradin, Duke of Suabia and last of the Staufer, was beheaded on October 29, 1268. His case, however, presents a special problem under the laws of war, namely whether an enemy leader, who has been made a prisoner of war, can be legally put to death.[12] Conradin had suffered defeat at the hands of Charles of Anjou near Tagliacozzo. On April 13, 1313, the Emperor caused Robert of Anjou, King of Naples, to be convicted contumaciously as a traitor, but the sentence ultimately was vacated by Pope Clement V on March 14, 1314. The proceedings against Joan of Naples in the fourteenth century, under accusation of complicity in the murder of her husband Andrew, King of Hungary, were discontinued not long after their initiation.

Mary Queen of Scots was cited before the Royal Commission appointed on October 5, 1586, by Queen Elizabeth, and accused as an accessory to Anthony Babington's plot. The Stuart queen appealed to her rights under the law of nations: *Par in parem potestatem non habet.* Charles I, in January 1649, resolutely objected to the jurisdiction of the special High Court of Justice which the British Parliament had created for his trial. At the conclusion of its summary proceedings this tribunal found, however, that the king could be condemned to death " . . . . By the Fundamental law of this kingdom, by the general law of all nations, and the unanimous consent of all rational men in the world. . . . ."[13]

Among numerous instances of judicial and summary proceedings against authorized agents of the sovereign or the state, one might mention the impeachment of William, Earl of Portland, in Great Britain, on April 1, 1701, for "concluding the Treaty of Partition, which was . . . . dangerous to the peace of Europe."[14] On April 14, 1701, the Commons instituted similar proceedings against John, Lord Sommers, Edward, Earl of Orford, and Charles, Lord Halifax, for advising the Treaty of Partition. Lord Sommers was tried by the Lords on June 17, 1701, in Westminster Hall; the charges against him as well as the other accused ultimately were dismissed. The spectacle was repeated when Oxford and Bolingbroke signed the Treaty of Utrecht.

[12] Nys, The Trial of Mary Queen of Scots from the Point of View of Public International Law, 17 Jurid. Rev. 50 (1905).

[13] "A perfect NARRATIVE of the whole PROCEEDINGS of the HIGH COURT OF JUSTICE, in the Trial of the KING, in Westminster-Hall. With the several Speeches of the King, Lord President, and Solicitor General. Published by Authority, to prevent false and impertinent Relations—January 20–27. A.D. 1649. Licensed by Gilbert Mabbot," in 4 Howell, State Trials, c. 993, at c. 1032.

[14] Hatsell's Precedents of Proceedings in the House of Commons, vol. IV, Relating to Conference and Impeachment, p. 255 (1818).

Yet it appears that the doctrine of corporate responsibility was equally well founded in theory and practice. While the Romans internally, also in matters of state, regarded their body politic as a *Gesamtvielheit* (or as a corporate entity only for civil proceedings), they enforced corporate (penal) responsibility in their foreign relations. Carthage, as Troy with the Greeks before, was considered and dealt with as a *Gesamtheit*.

The glossators supported the punishment of *universitates*. But, as can be seen, e.g., from the retribution which was meted out by imperial order for the murder of Bishop Adalbert of Mainz and his companions in 1158, in reality only a few leading actors in the crime were punished by death and the remainder fined. Following the doctrine of Johannes Teutonicus (d. ca. 1220) in the *Glossa ordinaria* to the *Decretum*, Innocent IV taught *Impossibile est quod universitas delinquat*. Thus, *Ad providam*, issued by Clement V under the compulsion of Philip the Fair, abolished the Templars "not by judicial sentence, ... but by way of an administrative order given in virtue of the fulness of papal authority."[15] Bartolus of Saxoferrato (1314–57) again believed that corporations could commit wrongs and be punished therefor. Among political theorists, "Ockham even went so far as to transfer the lore of corporate delict to the relation between Political Communities and that State which comprises all Mankind, in such wise that by a formal sentence of the Corporation of All Mortal Men (*universitas mortalium*) a guilty Nation might be deprived of any preeminence that it had enjoyed and indeed of all part and lot in the rulership of the World-Community."[16]

In practice, however, corporate responsibility resulted either in general pecuniary fines and the dissolution of the *universitas* or in the vicarious capital punishment of individuals. Churchmen like Innocent IV had objected, e.g., to the excommunication of corporate bodies because it would jeopardize the future welfare (in this world and particularly in the next) of the innocent members without justice. A profane lawyer, Johannes Oldendorp (1480–1567), attempted to reconcile the teachings of the canonists (decretists and decretalists) with those of the glossators and postglossators. He found that an *universitas* could not be distinguished from its individual members *materialiter*, but that it did differ *forma et ordinatio:* denial of this fact would overthrow all civil society. Yet, although he was unable to counter the dictum of Innocent, he held that a community could be held responsible for "omissive wrongs" (non-restraint of agents) and "indirect delicts" (arson, plunder).

[15] As quoted in O'Sullivan and Burns, Mediaeval Europe 616 (1943).

[16] Gierke, Political Theories of the Middle Ages, trans. F. W. Maitland, 64 (1900).

III. DOCTRINES OF CLASSICAL INTERNATIONAL LAW

The rules which Francisco de Vitoria (1480–1546) initiated, when rising nation-states made the formal arrangement of international relations a necessity, were developed from extant customs, humanitarian recommendations, and purported jural analogies. The responsibility doctrines of international law were primarily designed to decrease the violence, and eventually to bring about the total abolition, of warfare. Victoria supported the punishment of an enemy even after his defeat in battle and beyond the needs of mere self-defense. But this left aggressors and depraved rulers to be restrained only by acts of high policy as permitted by the fortunes of war.

Balthazar Ayala (1548–84) recommended that the pope be recognized as supreme judge for instances where sovereigns violated the law of nations or resorted to indefensible cruelties in the conduct of their (perhaps initially lawful) military campaigns. Ayala opposed municipal punishment of war criminals: if it did not lead to the unwarranted exculpation of the guilty ones, it could prove subversive to the general order of the state. But just as the Spanish judge advocate opposed the idea of a people trying its own sovereign, he did not deem the enemy qualified to conduct the requisite proceedings after his victory. The power relationship which Ayala proposed in his system could have had important repercussions upon the international order, the pope possessing not only a more or less administrative function (comparable to the modern League of Nations and the courts connected with its system), but also a very real judicial one. Since Ayala relied on a strong international procedure and somehow on real judicial proceedings for rulers and high military leaders (the very point in which he was later opposed by Vattel), he could afford to admit the plea of superior orders for the benefit of ordinary soldiers.

Alberico Gentili (1552–1608), learned civilian and steeped in the doctrines of Bartolus, held that war could be made as "punishment" for "cases in which a sovereign or a nation does wrong."[17] A sovereign, by any (official?) act, *eo ipso* binds his state which, in its entirety, is subject to punishment ("according to the law of nations") for the wrong of the ruler. And the same applies "to instances in which a private individual has done wrong and his sovereign or nation has failed to atone for [note: not *repair!*] his fault."[18]

For Hugo Grotius (Huigh de Groot, 1563–1645), as for Gentili, war

[17] De Jure Belli Libri Tres, I, XXI (1598), Carnegie Endowment: Classics of International Law, vol. II, Trans. by J. C. Rolfe (1935).

[18] Ibid.

could not only be an instrument for correcting political situations, but also for meting out punishment. But war as a police action and separate trial of the responsible sovereign could not exist in Grotius' conception. Responsibility, therefore, did not appear to him as the important element, which had to be considered in a trial of individuals upon the successful conclusion of the "just war" (cf. Ayala's proposal, supra). Grotius recognized it only as an incidental factor determining the justice and severity of a war. As war itself constitutes the punishment, the responsibility of groups almost eclipses the (original) responsibility of individuals in his arguments.

Grotius held that most wars were not undertaken for the purpose of punishment, although even the latter cause had not infrequently been joined by the desire to make good some loss. He suggested that war as punishment should not be commenced for trivial causes. Grotius pioneered in showing the legality of war, not only for the above-mentioned instances where those, whose interests have been injured, mete out the "retribution," but also for the purpose of humanitarian intervention on behalf of others. A community and/or its rulers may also be held responsible for the crime of a subject if they knew of it and took no such preventive measures as stood in their power to employ. And the same responsibility is incurred by a community and/or its ruler if they do not abide by the principle *aut dedere aut punire*. As Grotius applied the latter rule only to acts which injured mankind at large, he may be said to have laid the groundwork here for the contemporary exemption of "political offenses" from extradition.

The eminent Dutch jurist frankly avowed that, properly speaking, no one should be punished for another's wrong; but he was equally ready to approve certain exceptions. He also stated that the municipal responsibility of a king could only assume a conditional civil character. Vásquez had stated that, "A ruler who maltreats an innocent man by that very act ceases to be a ruler." But Grotius countered such doctrine with the observation that, "A statement either less true or more dangerous than that, it would be hard to make."[19] If the king renounces his governmental authority or has manifestly abandoned it, he is subject to trial just like any other private person; but he cannot be called to account for deeds committed while he was still acting in an official capacity. And, furthermore, "He is by no means to be considered as having renounced a thing who is merely too neglectful of it."[20] A ruler is punished either by a "just war"

[19] De Jure Belli ac Pacis Libri Tres, 2, I, 9 (2) (1625), Carnegie Endowment: Classics of International Law, vol. II, trans. by Francis W. Kelsey (1925).

[20] Ibid., 1, IV, 9.

made upon his domain or by *poenae naturales*. As for the latter, the infliction of great suffering by the Deity upon a people really affects their ruler as punishment.

While Richard Zouche (1590–1660) dealt mainly with the *ius in bello*, as far as his writings on international law are concerned, Samuel Pufendorf (1632–94) furnished comments of a more general nature. The latter stated: "A punishment can in general be defined as an evil of suffering that is inflicted in proportion to the evil of action, or as some troublesome evil which is imposed upon a man by way of coercion, and by the authority of the state, in view of some antecedent delict."[21] Pufendorf, like Hobbes, regarded the unauthorized crime of the corporation's agent solely as his own responsibility. But if the agent had received the express approval or instruction of the *universitas*, Pufendorf declared him as well as the *universitas* liable to punishment. The corporate entity can be dissolved and all of its guilty members fined. In matters affecting international relations, however, "criminal responsibility" and liability to punishment could only be enforced through the workings of nature since Pufendorf found that no human courts existed to sit in judgment over princes and states. Thus, while Pufendorf did not resort to Grotius' proof of the "indirect" punishment of princes, he simply asked all peoples to suffer the aberrations of their rulers, and the consequences, as "a turn of fortune."[22]

Christian Wolff (1679–1754) believed that if a sovereign oppresses his subjects, foreign rulers possess the right of interceding in behalf of the unfortunates. He recommended that such measures of humanitarian intervention be limited to peaceful actions. When a sovereign or a state injures the interests, and imperils the security, of another nation, the latter has the right to self-defense and punishment. The wrong of the sovereign becomes the wrong of the state because in Wolff's system, the sovereign still *is* the state. "The act of the ruler of a state as such, by which injury is caused to outsiders, the people is bound to assume as its own."[23] A "disturber of public security" can be removed, however, by the (military) action of several other states.

According to Emer de Vattel (1714–87), "the duty and contract of civil society oblige it to make all effort not to change its status."[24] But

[21] De Jure Naturae et Gentium Libri Octo, 8, III, 4 (1672), Carnegie Endowment: Classics of International Law, vol. II, trans. by C. H. Oldfather and W. A. Oldfather (1934).

[22] Ibid., 8, III, 30.

[23] Jus Gentium Methodo Scientifica Pertractum, V, 600 (1749), Carnegie Endowment: Classics of International Law, vol. II; trans. by J. H. Drake (1934).

[24] Le Droit des Gens, 1, XVII, 201 (1758), Carnegie Endowment: Classics of International Law, vol. III, trans. by Charles G. Fenwick (1916).

this is no rigid provision. Ordinarily, sovereigns and states will abide by the rules which Vattel listed for peaceful international relations. Yet while no nation has the right to interfere in the government of another and while no sovereign may make himself judge of the conduct of another, there exists a right of self-protection and united action against a wrongdoer. Subjects may also resist, and separate themselves from, a sovereign who violates the fundamental laws. This principle, however, should not be employed to authorize criminal designs against the peace of nations. Likewise, "It is in violation of the Law of Nations to call on subjects to revolt when they are actually obeying their sovereign, although complaining of his rule."[25]

Vattel conceded that there were also occasions on which nations need exercise no restraint as regards the right of self-defense and foreign intervention. A sovereign has the duty to avenge injuries to the state and to protect his subjects. He should not permit citizens of his state to offend foreign states or their subjects. Only through express approval of his act by the wrongdoer's state or sovereign will a wrong be charged to the culprit's nation. An offensive war for the punishment of a nation must be founded, "like every other war,"[26] upon right (actual injury received and requirements of self-defense) and upon necessity (impossibility of obtaining "just" satisfaction by other means than war). But under no circumstances would Vattel countenance "the dangerous error or the extravagant pretense of those who assume the right to punish a nation for faults which do not concern them; men, who senselessly setting themselves up as defenders of the cause of God, undertake to punish the depravity of morals or the irreligious life of a people who are not committed to their care."[27]

IV. CRIMINAL RESPONSIBILITY AND CONTEMPORARY INTERNATIONAL LAW

Contemporary international law no longer is the law of sovereigns. It governs the relations between independent states and prescribes state responsibility rather than state conduct.[28] International law contains the rules which individuals must observe lest their states be held liable for their acts and omissions. To avoid incurring this quasi-civil liability and exposing themselves to reprisals, governments provide for, respectively assent to, the enforcement of international law through municipal law.

[25] Ibid., 2, IV, 56.

[26] Ibid., 3, III, 41. [27] Ibid.; cf. also 2, VII, 1.

[28] Wright, The Enforcement of International Law through Municipal Law in the United States, University of Illinois Studies in the Social Sciences, vol. V, No. 1, p. 12 (1916). Cf. ibid., pp. 228–29.

Municipal criminal codes allow the prosecution of individuals whose activities may not directly affect their own state, but might threaten the continued good relations with a foreign country. Libel on a foreign sovereign and injury to an ambassador fall into this category. War crimes and war treason also possess a municipal character. War crimes in the narrow sense include violations of the recognized rules of warfare, hostilities by individuals not members of enemy armed forces, espionage and treachery, and all marauding acts.[29] These are distinguished from "ordinary" municipal-law crimes, such as murder and theft, because they primarily serve to enforce norms of international law.[30]

"International law crimes" are special grounds of state jurisdiction. The offense of piracy (*iure gentium*) has been considered a prototype for all international law crimes. Its origin is dated from the time when the "freedom of the seas" was first enunciated as a principle of the law of nations. In order to insure the continued safety of the merchant ships of the several states and to provide for the effective repression of piratical acts of depredation on the high seas also in the future, the Family of Nations adopted at an early date this dignified form of self-help. This type of customary international law has been supplemented by particular and general conventional international law. Here we find agreements regarding the protection of submarine cables, the policing of the fisheries of the North Sea, the abolition of the slave trade and slavery, the control of the traffic in narcotics, the supervision of the international trade in arms and ammunition and implements of war, the traffic in women and children (white slavery), the liquor traffic in Africa, the suppression of the circulation of obscene publications, the suppression of counterfeiting currency and securities, and the suppression of terrorism. Some of the crimes defined in international conventions have found almost universal enforcement (e.g., Article II of the Cables Convention of 1864 in time of peace, and the Geneva [Red Cross] Conventions of 1864, 1908, and 1929, during hostilities). Others, such as the "crime of war" under the Briand-Kellogg Pact, still are innocuous ideals.

There are various forms in which a state may assume jurisdiction, if a crime has been committed. The territorial principle, "oldest" among the five principles of jurisdiction,[31] determines jurisdiction by the place where

[29] 2 Oppenheim, International Law 451 (6th ed., 1940).

[30] Cf. Kelsen, Collective and Individual Responsibility in International Law with Particular Regard to the Punishment of War Criminals, 35 Calif. L. Rev. 530, at pp. 555–56 (1943).

[31] Cf. Harvard Draft Convention on Jurisdiction with Respect to Crime, Edwin D. Dickinson, Reporter, 29 Am. J. Int. L., Supplement, Part II, pp. 445 ff. (1935).

the crime was committed, which may include cases where the "gist" of the offense consists of the harmful *act* as well as instances where it consists of the *consequence* of the act. The nationality principle refers to jurisdiction over natural persons who are nationals of the state, but also to jurisdiction over corporations and other juristic persons possessing the national character of that state. Among aliens assimilated to nationals may be found those who perform a public function for the state or who are part of the personnel of a ship or aircraft of its flag. If a crime is committed by an alien against the security, the territorial integrity, or the political independence of a state, yet outside of its territory, the courts of that state may assume jurisdiction upon the protective principle. Although the fourth principle, that of universality, has frequently been regarded as the "piracy principle," the Harvard Draft envisages a larger scope for its application. Jurisdiction on the universality principle is the classical alternative to extradition, and many states have made provision in their municipal codes for its exercise. General acceptance of the universality principle by all states for certain acts would render the application of the much-criticized passive-personality principle unnecessary. The latter justifies state jurisdiction solely upon the nationality of the person injured. Prominent Continental writers have denounced this principle as "one of the worst inventions of nationalism in jurisprudence,"[33] and both the American Restatement of the Law of Conflict of Laws and the Harvard Draft Convention on Jurisdiction with Respect to Crime have joined in rejecting it.

It is a rule, as Chief Justice Marshall expressed it in *The Antelope*,[33] that: "The courts of no country execute the penal laws of another. . . ."[34] Moreover, no foreign process can be had in criminal cases. This hampers proceedings on the nationality, protective, and passive-personality principles, and it also shows that even the universality principle cannot take the place of a truly international procedure. If the "gist" of the offense consists of the *consequence* of the harmful act or omission, the application of the territorial principle might likewise offer only limited possibilities. In the absence of letters rogatory in these causes, and due to the predomi-

[33] Mendelssohn Bartholdy, The American Restatement of the Law of Conflict of Laws, Transactions, Grotius Society, vol. XXI, p. 161, at 169, n. (i) (1935).

[33] 10 Wheat. (U.S.) 66 (1825).

[34] *Ibid.*, at 125. Precedents: Folliott v. Ogden, 1 H. Bl. 123 (1789), aff'd in Ogden v. Folliott, 3 T.R. 726 (1790); Ogden v. Folliott, 4 Bro. P.C. 111 (1792); Wolff v. Oxholm, 6 M. and S. 92 (1817). "Penal" laws in Marshall's dictum refer to *criminal* jurisdiction. Cf., inter alia, Huntington v. Attrill, 146 U.S. 657, 13 S. Ct. 224 (1892), and the Privy Council case by the same parties [1893] A. C. 150.

nantly territorial conception of contemporary criminal law, compensation is sought in the expedient of extradition.

The moral duty of extradition, incumbent upon all states, is usually fortified by treaties. The latter have gradually changed from the list or enumeration system (specifying extradition offenses) to the broader gravity-of-penalty system. Multilateral extradition conventions are a twentieth-century achievement. "The overwhelming majority of treaties provide, in substance, that (1) Extradition is, as a rule, limited to offenses committed outside the territory of the requested State; (2) Extradition may be granted, under specified conditions, for crimes committed within the territory of third States."[35] The evidence submitted together with the request for extradition should be such as to establish a prima facie case against the accused. American extradition practice considers *in contumaciam* convictions of foreign countries irrelevant; in such cases, the requested person is regarded as *charged with*, not convicted of, the offense. Upon extradition, a person should be prosecuted only for the specific offense for which his surrender was asked of the asylum state.

The exclusion of so-called political offenses from the category of extraditable crimes plays an important, if most controversial, role in contemporary international relations. "Treasons, then," Secretary of State Thomas Jefferson wrote to Messrs. Carmichael and Short in 1792, "taking the *simulated* with the *real*, are sufficiently punished by exile."[36] After the Concert of Europe had virtually abolished the political-offense exemptions in 1833, Belgium specially inserted a liberal provision recognizing these in her extradition legislation and in the treaty with France of 1834. Forty-six treaties signed during the following thirty years contained similar articles as the Franco-Belgian agreement.[37] In 1856, the Belgian law was modified, however, by the "attentat clause." This provision stated that an attempt against the life of the head of a government or against that of any member of his family, when such an attempt "comprises the act either of murder or assassination, or of poisoning, shall not be considered a political offence or an act connected with such an offence."[38] Most of the extradition treaties subsequently concluded contain a similar reservation in one form or another, whenever reference is made to political offenses. The Finnish

[35] Harvard Draft Convention on Extradition, Charles K. Burdick, Reporter, 29 Am. J. Int. L., Supplement, Part I, p. 91 (1935).

[36] From a statement dated March 22, 1792. Am. State Papers For. Rels. 258; 4 Moore, Digest of International Law 332 (1906).

[37] Mander, Foundations of Modern World Society 96 (1941).

[38] As quoted ibid.

law of 1922 permits extradition of any political offender whose crime involved particular cruelty. As some crimes possess a mixed political and common ("evolutive" or "anterograde" and "retrograde") character, Switzerland, a traditional haven of European political refugees, first adopted the principle of "predominance" in 1892. Hereunder, proof that his crime entailed predominantly political elements rests with the accused individual.

V. WAR CRIMES, THE CRIME OF WAR, AND AN INTERNATIONAL CRIMINAL COURT

Some progress has been achieved in the unification of criminal codes and the international standardization of criminal procedure for safeguarding the peace and welfare of nations. Concrete proposals have also been drafted looking toward the establishment of a direct supranational procedure which can deal with the most dangerous "political crimes," with the "crime of war," and with certain violations of the laws of warfare. A good deal of this preparatory work will be put to the test when the war criminals of the present conflict are punished. According to the Moscow Declaration on German Atrocities, issued on November 1, 1943, most of the culprits "will be brought back to the scene of their crimes and judged on the spot by the people whom they have outraged." Separate provision is being made, however, for dealing with "the case of the major criminals, whose offenses have no particular geographical localization."[39] There is strong sentiment now that the latter proceedings be not only of a judicial character, but also that they take place in the permanent forum envisaged by Ayala (1582),[40] Tsar Nicolas I (1818), Bismarck (1870, *ad hoc?*), the Dutch government in 1920 (saving clause in the reply to the first Allied request for the surrender of the ex-Kaiser), and the late Dr. James Brown Scott (1921).

VI. CONCLUSIONS AND OUTLOOK

Part of the quest for a better world order is the enforcement of adequate individual responsibility under criminal law for the protection of mankind in general. This is a problem which concerns both substantive law and procedure. The well-known Austinian dilemma regarding international law may be resolved by defining the latter as "the science dealing with the area of agreement of the foreign policies (*iura fecialia*) of all civilized states." (*Ius ad bellum* as well as *ius in bello* would be included

[39] Department of State Bulletin, vol. IX, p. 310, at 311 (1943).

[40] The worldly nature of contemporary international institutions does not derogate from the essence of Ayala's proposal, but it eliminates the objections of Vattel.

here because in time of war much of the diplomacy of a state is replaced by the rules and practices of warfare.) International law is, therefore, a coordinating discipline. Now, already the Roman *ius publicum* had much in common with Roman foreign policy as reflected in the *ius feciale*. Even today sovereigns and other representative agents of the state enjoy many of the exemptions in municipal public and administrative law, which they find as privileges and immunities in international law. These considerations lead to the recognition of the "administrative-political" character of international law. One could almost speak of *ius publicum* as "internal administrative law" and of *ius feciale* as "external administrative law" of a state. Our principal shortcomings lie in the failure to discern that "administrative law" (the "external" conniving with the "internal") has limited the "judicial law" excessively. What remains to be shown in another study as "the most judicial law"—namely, criminal law—cannot be enforced on a sufficient scale at present without distinction of the culprit's station—regardless of the harm suffered by humanity at large.[41]

The distinction between *ius publicum* and *ius privatum* (Gaius), *gubernaculum* and *jurisdictio* (Bracton), (*regimen*) *regale* and *politicum* (Fortescue)—between the administrative-political and the judicial function—is nothing new. It has recently been recalled for the constitution of municipal systems,[42] and applies equally well to the realm of international organization where *gubernaculum* presently blots out *jurisdictio*. Nothing can make this clearer than the responsibility doctrines which still prevail in international law. Ideology and political preference play an important role in all phases of the "administrative-political law." In international law they have a far-reaching effect.

The "functionalists" have done much of late to emphasize the ideological, political, and social data to which (the administrative) international law should be adapted. But their arguments are still vitiated by some misleading analogies (e.g., private law) and by occasional confusions of "administrative" and "judicial" law (e.g., the alleged primitivity of international law). The customary distinction between municipal law and international law is useful when one has to deal with more or less technical questions of the enforcement of international law through municipal law. Discussion on this level, however, cannot transcend the narrow limits of national interest; the potentialities of world organization cannot be appreciated. Further progress in (our branch of) jurisprudence would seem

[41] A reassessment of the diplomatic privileges and immunities, inter alia, is here envisaged, not their abolition.

[42] McIlwain, Constitutionalism, Ancient and Modern, esp. p. 149 (1940).

to depend upon the adoption of a distinction between *gubernaculum* and *jurisdictio*. This may require a re-examination of "ultimate" legal norms and the classification of all rules of law according to *whom they govern*, not according to *who administers them*. Compare the Permanent Court of International Justice, administering *ius quod ad status litigantes spectat*, and a special world court system, dealing with individuals according to *ius quod ad singulorum et societatis hominum utilitatem spectat*.

As regards procedural matters, we can frankly recognize that a world state is unlikely to be organized in the course of the twentieth century. But international agreements might be concluded for the progressive decrease of the absolute sovereignty of national states. At present, the Conflict of Laws disposes fairly well of the bulk of civil litigations arising between parties in different municipal jurisdictions. The operation of the criminal law irrespective of national boundaries and sectional interests, however, should form one of the main points in the demand for diminished national sovereignty. Formal inauguration of world criminal law is quite feasible,[43] and a world criminal court could be established even for our own world order. The technical difficulties which the creation of such a procedure presents can be readily overcome.[44] For a number of "political crimes" it would become the instance of final appeal, and it could eventually fulfil many of the functions for the world community which the Supreme Court fulfils for the United States. If it is seen more clearly, after the general decrease of *gubernaculum*, that all judges are the agents of the *societas hominum* as conceived by Cicero, and that they do not "belong" to specific national states, there may be less opposition to plans for a world tribunal.

A world criminal court can be widened into a world (supreme) court in a world state. The latter tribunal may consist of two chambers, one dealing with such criminal, and the other dealing with such civil, cases as are conceded to their jurisdiction in the court's statute. In a world of semisovereign states (the farthest goal which can conceivably be reached in our lifetime), the foregoing, as well as the establishment of a world police force for the arrest of culprits and the enforcement of decisions of the world court, would appear premature. But these questions are now under investigation, and, in any event, the "just war" in support of the Briand-Kellogg Pact would constitute the ultimate sanction and safety measure.

Several writers have suggested that in the growth of world government, the nature and function of the League of Nations Assembly may likewise

[43] Cf. Ehrlich, The Sociology of Law, 36 Harv. L. Rev. 130 (1922).

[44] Hocking, Man and the State 375–76 (1926).

be altered or replaced. Eventually, it may be transformed into a world legislature, which can pass laws, can impeach, and, if necessary, can issue bills of attainder. The world legislature could be organized along the lines of the International Labor Assembly, national (i.e., then "provincial" or "sectional") delegations being composed partly of government representatives (of the state, province, or section) and partly of delegates from the two or more major political parties of the area. Or direct elections could be held for determining the representatives in the world legislature. Even a world-wide synchronization and general unification of the latter type of elections need not be dismissed as wholly utopian. This may promote the crystallization of public opinion for a world state and, ultimately, for the creation of an executive for such a state. It is doubtful, however, whether it will ever be expedient to go in any way beyond a world council in the choice of a world state executive. In the growth of world political parties, sectional differences rather than a "class structure" of world society are more likely to appear as determinants. Whether the so-called world state envisaged by these writers would represent, e.g., a union or a federation, need not be discussed here.

Contemporary international law deals with sovereign nation-states, and looks toward their unreformed preservation. The element of individual responsibility is extraneous to international law. Individual criminal responsibility under world law is not only feasible, but its employment may prove of great benefit in the promotion of a better world order.

INTERNAL CONSEQUENCES OF INTERNATIONAL AIR REGULATIONS

ERWIN SEAGO AND VICTOR E. FURMAN*

THE International Civil Aviation Conference which convened last November in Chicago was the direct result of an awakening among the nations of the world to the dangerous prospect of greatly expanded international air navigation in a postwar world lacking in uniform air-traffic rules and providing no adequate political or legal foundation for global flight. The pre-war stature of international aviation already had begun to focus attention upon the fact that while, technologically, we fly, widely and well, legally, and politically we remain grounded in the past. The Chicago conference was a joint effort by fifty-four nations of the world[1] to create a framework of international law and politics within which postwar civil aviation can realize its full potentialities.

The attempt on the international level to conform aerial-navigation standards to a reasonable and safe international pattern may have indirect consequences not fully contemplated. As Mr. Justice Holmes said in *Missouri* v. *Holland*,[2] there may have been "called into life a being the development of which could not have been foreseen completely by the most gifted of its begetters." These words were spoken with reference to the United States Constitution, but it is our opinion that they will prove prophetic in application to the Chicago Convention—the "constitution" of the International Civil Aviation Organization. This opinion is based on this study and on personal observation of and participation in the Chicago Conference. The ratification of the Convention by the United States will have a profound, but generally unpremeditated, influence on domestic aviation, in that it promises to eliminate our state lines with respect to many air-traffic rules and regulations.

* Of the Chicago Bar.

[1] Afghanistan, Australia, Belgium, Bolivia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Cuba, Czechoslovakia, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iran, Iraq, Ireland, Lebanon, Liberia, Luxembourg, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, Philippine Commonwealth, Poland, Portugal, Spain, Sweden, Switzerland, Syria, Turkey, Union of South Africa, United Kingdom, United States, Uruguay, Venezuela, and Yugoslavia; and the Danish Minister and the Tai Minister who were invited to the conference by the government of the United States to be present in their personal capacities.

[2] 252 U.S. 416 (1920).

Full understanding and appreciation of the unique opportunities to foster the development of international civil aviation presented at the Chicago Conference is possible only after a review of the international situation prior to the Conference.

It must first be understood that international aviation exists at present only by concession, not at all by right. The sovereignty of each nation of the globe over its own air space is absolute. The permanent Convention drafted at Chicago recognized and continued this situation.[3]

In the past this sovereign control of the air often has been utilized principally as a means of levying toll upon international flight, or as a method of otherwise exploiting some strategic geographical location or political advantage.[4] It has been truly said, relative to this type of international bargaining, "In the long record of negotiation, there is little indication of any policy specifically directed to the improvement of aviation services in the general interest, or of any consideration of what would be best for the countries whose territories constituted the arena for so much international wrangling."[5]

The attempts of the past to remedy this situation and to standardize air-navigation rules and practices have not been very successful. The *International Convention for the Regulation of Aerial Navigation* drafted at Paris on October 13, 1919, establishing a "Commission International de Navigation Aerienne" (CINA), was the initial step in the field of public air-law conventions. This commission was largely European in character and influence, and although the convention was signed, it was never ratified, by the United States. The technical annexes to that convention now are largely out of date. A somewhat similar international convention, the *Ibero-American Convention Relating to Air Navigation* (Convenio Ibero-Americano de Navigacion Aerea [CIANA]), which was signed at Madrid on November 1, 1926 (never adhered to by the United States), had only a limited influence and that largely among Spanish-speaking nations. The *Habana Convention on Commerical Aviation* of February 20, 1928, was ratified by the United States and joined in by many Latin-American countries. It contained no technical provisions. Another convention somewhat of this type, to which the United States was a party, and which had the limited effect of permitting the contracting parties to enforce certain sanitary and

[3] Article 1 of the Convention on International Civil Aviation provides that "the contracting States recognize that every other State has complete and exclusive sovereignty over the airspace above its territory."

[4] See VanZandt, Civil Aviation and Peace, for many examples.

[5] Brigadier-General Sir Osborne Mance, International Air Transport 98 (1943).

quarantine regulations upon visiting aircraft, was the *International Sanitary Convention for Air Navigation*, adopted by the Permanent Committee of the International Public Health Office in Paris on April 29, 1932.

In addition to the above public air-law conventions a number of draft conventions in the field of private air-law have been prepared from time to time by the "International Technical Committee of Aerial Legal Experts" (Comité International Technique d'Experts Juridiques Aĕrriens [CITEJA]), since the organization of this committee on May 17, 1926. This was a continuing committee on which some thirty states were represented, including the United States. It prepared draft conventions for consideration and action at diplomatic conferences, to which delegates from the various states were accredited. These conventions embodied rules of law to be applied to foreign aircraft which had been permitted to fly the air space of the contracting parties.[6] It is expected that efforts along the lines followed by this committee will be continued after the war.[7]

These conventions in the fields of public and private international air law, limited as they have been in influence and outmoded as are their technical provisions, serve today chiefly to direct attention to the urgent need for modern, universal air standards and for an agreement on the

[6] Examples of this type of private air-law convention are the Warsaw convention of October 12, 1929, "for the unification of certain rules relating to international transportation by air," which has been adhered to by the United States, and Rome convention of May 29, 1933, "for the unification of certain rules relating to the precautionary attachment of aircraft," which was signed on behalf of the United States. An example of the enforcement of conventions of this type by the courts of the United States is found in Wyman v. Pan American Airways, Inc., 43 N.Y. S. 2d 420 (1943). In this case recovery was permitted only in accordance with the Warsaw convention. Generally regarding CITEJA see Ide, The History and Accomplishments of the International Technical Committee of Aerial Legal Experts, 3 Journal of Air Law 27 (1932), and Latchford, Codification of Private International Air Law, an address before the Federal Bar Association, Washington, 1936.

[7] Resolution No. VII adopted at the Chicago Conference is as follows:

"1. That the various governments represented at this International Civil Aviation Conference give consideration to the desirability of bringing about the resumption at the earliest possible date of the CITEJA sessions which were suspended because of the outbreak of war; of making necessary contributions toward the expenses of the Secretariat of CITEJA meetings; and

"2. That consideration also be given by the various governments to the desirability of coordinating the activities of CITEJA with those of the Provisional International Civil Aviation Organization and, after it shall have come into existence, of the permanent International Civil Aviation Organization established pursuant to the Convention on International Civil Aviation drawn up at Chicago on December 6, 1944.

On the other hand, Article 80 of the permanent Convention states relative to CINA and the Habana convention that "each contracting State undertakes, immediately upon the coming into force of this Convention, to give notice of denunciation of the Convention relating to the Regulation of Aerial Navigation signed at Paris on October 13, 1919, or the Convention on Commercial Aviation signed at Habana on February 20, 1928, if it is a party of either. As between contracting states, this Convention supersedes the Conventions of Paris and Habana previously referred to."

political level among the nations of the world, which can serve as a firm foundation for the growth of international civil aviation.

It was against this background that the International Civil Aviation Conference convened in Chicago on November 1, 1944. When the Conference adjourned on December 7, the following instruments had been formulated:

1. The Final Act, consisting of twelve "resolutions and recommendations"[8] adopted by the Conference. (All other instruments drafted at the Conference are appendices to the Final Act.)

2. The Interim Agreement on International Civil Aviation, designed to "establish a provisional international organization of a technical and advisory nature of sovereign States for the purpose of collaboration in the field of international civil aviation," to "be known as the Provisional International Civil Aviation Organization."[9]

3. The Convention on International Civil Aviation, representing an agreement "on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of

[8] They are listed as follows:

I. Preparation of the Final Act
II. Draft Technical Annexes
III. Technical Personnel
IV. Metric System
V. Transfer of Title to Aircraft
VI. Rome Convention (May 29, 1933) Relating to the Precautionary Attachment of Aircraft
VII. Resumption of and Coordination with the Sessions of CITEJA
VIII. Standard Form of Agreement for Provisional Air Routes
IX. Flight Documents and Forms
X. Recommendation That Certain Matters Be Referred to the Interim Council for Study
XI. Publication of Documentation
XII. Resolution of Gratitude and Appreciation

[9] Article 1, § 1, of the Agreement. The organization established by this Agreement "shall last until a new permanent convention on international civil aviation shall have come into force, or another conference on international civil aviation shall have agreed upon other arrangements; *Provided, however*, That the interim period shall in no event exceed three years from the coming into force of the present Agreement," Article I, § 3. The Agreement "shall come into force when it has been accepted by twenty-six states," Article XVII. The purpose of the Interim Agreement was to establish, immediately, a temporary international organization for the period between the Chicago Conference and the permanent International Organization. To insure that the provisional organization shall come into being promptly, Article XVI of the Agreement provides that no state elected at the Chicago Conference to a place on the Interim Council shall become a member of the council until it has accepted the Interim Agreement and "unless such acceptance has taken place within six months after December 7, 1944."

Forty-four nations signed the Interim Agreement at Chicago, but at this writing only six, Canada, Ethiopia, the Netherlands, Norway, Poland, and the United States, have adhered to it. The seat of the provisional organization will be at Montreal, Canada.

equality of opportunity and operated soundly and economically,"[10] establishes the permanent International Civil Aviation Organization. This convention, the "constitution" of the permanent organization, is in four parts.[11] The organization it establishes consists of an assembly of all the contracting states and a permanent council of twenty-one members elected by the assembly every three years. An Air Navigation Commission is provided for as a technical aid to the organization.[12] The permanent organization comes into being after twenty-six states have formally ratified it.[13]

4. The International Air Services Transit Agreement, frequently referred to as the "Two-Freedoms" document, under the terms of which "each contracting State grants to the other contracting States the following freedoms of the air in respect of scheduled international air services:

(1) The privilege to fly across its territory without landing.

(2) The privilege to land for non-traffic purposes.[14] These are known as the "political" freedoms.

[10] Preamble of the Convention.

[11] Part I, Air Navigation, with the following chapters:

I. General Principals and Application of the Convention
II. Flight over Territory of Contracting States
III. Nationality of Aircraft
IV. Measures to Facilitate Air Navigation
V. Conditions to Be Fulfilled with Respect to Aircraft
VI. International Standards and Recommended Practices

Part II, The International Civil Aviation Organization, with the following chapters:

VII. The Organization
VIII. The Assembly
IX. The Council
X. The Air Navigation Commission
XI. Personnel
XII. Finance
XIII. Other International Arrangements

Part III, International Air Transport, with the following chapters:

XIV. Information and Reports
XV. Airports and Other Air Navigation Facilities
XVI. Joint Operating Organizations and Pooled Services

Part IV, Final Provisions, with the following chapters:

XVII. Other Aeronautical Agreements and Arrangements
XVIII. Disputes and Default
XIX. War
XX. Annexes
XXI. Ratifications, Adherences, Amendments, and Denunciations
XXII. Definitions

There are a total of ninety-six Articles to the Convention.

[12] Article 56.

[13] Article 91(b). [14] Article I, § 1.

5. The International Air Transport Agreement, often called the "Five-Freedoms" document. It includes the two "political" freedoms of the Transit Agreement, and in addition grants contracting states the following "economic" freedoms:

(1) "The privilege to put down passengers, mail and cargo taken on in the territory of the State whose nationality the aircraft possesses;

(2) "The privilege to take on passengers, mail and cargo destined for the territory of the State whose nationality the aircraft possesses; and

(3) "The privilege to take on passengers, mail and cargo destined for the territory of any other contracting State and the privilege to put down passengers, mail and cargo coming from any such territory."[15]

These two "freedoms" documents represent a great step forward in freeing international air-transport from the pre-war type of national-boundary exploitation. At the same time domestic air-transport receives protection in that each contracting state retains its cabotage traffic.[16]

6. The Technical Annexes[17] forming Appendix V to the Final Act were drafted pursuant to Resolution II adopted by the Chicago Conference.[18]

[15] Article I, § 1.

[16] Article I, § 4 of the Transport Agreement provides that "each contracting State shall have the right to refuse permission to the aircraft of other contracting States to take on in its territory passengers, mail and cargo carried for remuneration or hire and destined for another point within its territory." This same language appears as a part of Article 7, chapter ii of the permanent Convention.

[17] Twelve in number, as listed in the text, infra, p. 340.

[18] RESOLUTION II, Draft Technical Annexes:

WHEREAS: The largest possible degree of international standardization of practice in many matters is important to safe, expeditious, and easy air navigation; and

WHEREAS: These matters typically involve problems of great variety and complexity, and require that much new ground be explored; and

WHEREAS: Considerable progress has been made, during the discussions of the present Conference, in the development of practice agreed upon as proper by the technicians participating in the discussions, but the time has been too limited, and the number of personnel able to participate directly too small, to permit carrying the discussions to final conviction of the adequacy or correctness of certain of the determinations here made;

The International Civil Aviation Conference

RESOLVES:

That the drafts of annexes for an international civil aviation convention, which are attached hereto as Appendix V, be accepted by the Conference, upon the bases that:

(a) The drafts as now presented shall be accepted by the participating States for immediate and continuing study;

(b) They shall be accepted as constituting models of the desirable scope and arrangement of the several annexes;

(c) The participating States undertake to forward to the Government of the United States (or to the Provisional International Civil Aviation Organization if it shall in the meantime have been established), by May 1, 1945, any recommendations which they may have for necessary additions, deletions, or amendments;

(d) The Government of the United States (or the Provisional International Civil Aviation Organization) will transmit such suggestions to the other participating States in anticipation

In the language of Mr. Adolf A. Berle, Jr., president of the Conference, in his closing address, these international rules and regulations are designed to establish "the technical freedom of the air."

The Final Act, containing twelve "resolutions and recommendations," was signed by the representatives of fifty-four nations.[19] The Interim Agreement at this writing has been signed by forty-four nations,[20] the permanent Convention by forty-one,[21] the Transit (Two-Freedoms) Agreement by thirty-seven,[22] and the Transport (Five-Freedoms) Agreement by twenty-four.[23] That the area of agreement among the nations of the world was so large, on a subject as complex and as important as international aviation, is surprising and certainly encouraging. Lack of complete concurrence on all topics does not detract from the success of the Conference but points rather to the difficulty and scope of the problems presented, to the conflicts of political and economic interests among the nations represented, and finally to the failures and shortcomings of previous attempts at international cooperation and understanding.[24]

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of meetings of the technical committees to be established by the Provisional International Civil Aviation Organization for dealing with the subject matter of the various documents, such meetings to be held as soon as practicable thereafter for the purpose of ultimate acceptance of the annexes in final form for attachment to a convention.

(e) Meanwhile, in so far as the Technical Subcommittees have been able to agree on recommended practices, the States of the world, bearing in mind their present international obligations, are urged to accept these practices as ones toward which the national practices of the several States should be directed as far and as rapidly as may prove practicable.

[19] See note 1, supra.

[20] Afghanistan, Australia, Belgium, Bolivia, Canada, Chile, China, Costa Rica, Dominican Republic, Ecuador, Egypt, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iran, Iraq, Ireland, Lebanon, Liberia, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Peru, Philippine Commonwealth, Poland, Portugal, Spain, Sweden, Switzerland, Syria, Turkey, United Kingdom, United States, Uruguay, Venezuela, Denmark, and Thai.

[21] Afghanistan, Australia, Belgium, Bolivia, Canada, Chile, China, Costa Rica, Dominican Republic, Ecuador, Egypt, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iran, Iraq, Ireland, Lebanon, Liberia, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Peru, Philippine Commonwealth, Poland, Portugal, Spain, Sweden, Syria, Turkey, United Kingdom, United States, Uruguay, Denmark, and Thai.

[22] Afghanistan, Belgium, Bolivia, Canada, Chile, Costa Rica, Ecuador, Egypt, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iran, Iraq, Lebanon, Liberia, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Peru, Philippine Commonwealth, Poland, Spain, Sweden, Turkey, United Kingdom, United States, Uruguay, Venezuela, Denmark, and Thai.

[23] Afghanistan, Bolivia, China, Costa Rica, Dominican Republic, Ecuador, Ethiopia, Guatemala, Haiti, Honduras, Iceland, Lebanon, Liberia, Mexico, Netherlands, Nicaragua, Peru, Sweden, Turkey, United States, Uruguay, Venezuela, Denmark, and Thai.

[24] VanZandt well summarizes the accomplishments of the Chicago Conference in Foreign Policy Reports, Vol. XX, No. 23 (February 15, 1945), in the following language:

"The Conference reaffirmed the absolute sovereignty of every State over the air above its territory. It recognized the exclusive interest of each country in its own internal air services

The preparation of the Technical Annexes was one of the most valuable phases of the work done at the Chicago Conference. The Annexes are twelve in number, and cover the following subjects:

Annex A, Airways Systems
Annex B, Communications Procedures and Systems
Annex C, Rules of the Air
Annex D, Air Traffic Control Practices
Annex E, Standards Governing the Licensing of Operating and Mechanical Personnel
Annex F, Log Book Requirements
Annex G, Airworthiness Requirements for Civil Aircraft Engaging in International Air Navigation
Annex H, Aircraft Registration and Identification Marks
Annex I, Meteorological Protection of International Aeronautics
Annex J, Aeronautical Maps and Charts
Annex K, Customs Procedures and Manifests
Annex L, Search and Rescue, and Investigation of Accidents.

The size of the task of preparing these rules of the air is indicated by the fact that in their present form they cover 234 typewritten single-spaced legal-size pages.

The Annexes are intended as "models of the desirable scope and arrangement" of the technical rules and regulations governing global flight, which will be adopted finally by the council of the permanent world organization. They become effective and binding on the nations which are members of the permanent organization only when adopted by two-thirds vote of the council and after submission to the member states.[25] But while they have

(cabotage). It brought together fifty-four nations in the midst of a global war, to exchange post-war aviation views.

"It established a world-wide basis for uniformity in essential technical matters (the technical annexes). It liberalized the conditions under which post-war international air transport can develop, at least for a large bloc of the world (the Two- and Five-Freedoms Agreements). Finally, it created a world organization of over fifty nations on a consultative rather than a 'planned economy' level, to assure nondiscrimination, to arbitrate injustices or hardships which the action of any member State might be deemed to cause another, and in general to foster the safe and rapid growth of international civil aviation throughout the world.

"This is perhaps as far as any international air conference can be expected to go until the fundamental economic conflicts which separate sovereign states are more fully resolved."

See also Burden, Chicago Critique, 23 National Aeronautics, No. 1, p. 15 (Jan., 1945).

[25] Article 90 of the Convention provides that:

(*a*) The adoption by the Council of the Annexes described in Article 54, subparagraph (1), shall require the vote of two-thirds of the Council at a meeting called for that purpose and shall then be submitted by the Council to each contracting State. Any such Annex or any amendment of an Annex shall become effective within three months after its submission to the contracting States or at the end of such longer period of time as the Council may prescribe, unless in the meantime a majority of the contracting States register their disapproval with the Council.

(*b*) The Council shall immediately notify all contracting States of the coming into force of any Annex or amendment thereto.

no immediate force and effect as international law, their influence already is being felt. The second Resolution adopted as a part of the Final Act at Chicago contemplates this.[26]

After the establishment of the world organization these international technical rules and standards, as finally adopted by the council, will be binding upon the member states, subject to the methods of obtaining compliance specified in the Convention.[27] We are concerned here, however, not with the application or enforcement of these standards on the international level, but rather with their effect upon the domestic air rules and regulations of the United States. For this purpose, it is assumed that the Annexes as drafted in Chicago are in fact a statement of approximately what the nations of the world will accept at this time in the way of minimum uniform civil aviation rules and practices. It seems a fair assumption that, after the technical experts of fifty-four nations have collaborated in formulating these regulations, they do represent about the best thought and widest agreement possible in the world today.

It must also be assumed that the permanent Convention will be adhered to by the United States and by at least twenty-five other nations of the world. That this study was undertaken at all attests the conviction of the authors, at least, that this particular international compact will become effective and that the United States will ratify it. This is not merely a hope that this will happen nor a belief that it should. This conviction results, rather, from observation of the trend of the Chicago Conference and from a knowledge of the wide approval of its results. It springs also from an appreciation of the fact that the airplane is peculiarly the vehicle of internal relations. "Aviation possesses immense possibilities either for good or evil. It represents both a threat and a promise. It can destroy, as the present war has shown so impressively; but it can also bring fresh hope and opportunity to the world. Whether its destructive or constructive phase will predominate after the war is of great importance to mankind."[28] The people of the world have learned, too, the truth of these statements: "A nation's transportation system is an integral part of its war-making potential. From the start civil airlines, both domestic and foreign, have played a vital part in the war. Civil transport equipment because of its great flexibility is peculiarly well adapted to military requirements."[29]

[26] See note 18, supra.

[27] See Articles 28, 37, 38, 39, 40, 85, 86, 87, and 88.

[28] VanZandt, Civil Aviation and Peace p. iii (1944).

[29] Ibid., p. 22.

The type of international understanding expressed in the instruments signed by fifty-four nations at Chicago last December is the best, perhaps the only, assurance that aviation will become, as it certainly can, a great new force for prosperity and peace.

The only type of international agreement mentioned in the United States Constitution is the treaty.[30] Of the Agreements drafted at Chicago only the permanent Convention has been submitted to the United States Senate.[31] Of the forty-one nations which signed the permanent Convention only the government of Poland, at this writing, has ratified it.[32]

The United States, however, has become a party to many international compacts by executive action alone and without Senate concurrence. Throughout most of our national history the Chief Executive has considered himself vested with the power to enter into various forms of international agreements covering a wide range of subjects. In fact, more executive agreements than treaties have been made.[33]

The Interim Agreement and both of the "freedoms" agreements have been adhered to by the United States through executive action only.[34] However, Article II, section 2, of the Transit Agreement and Article IV, section 3, of the Transport Agreement[35] become operative only upon ratification of the permanent Convention, and the second paragraph of

[30] The term "treaty" is used in Article I, § 10: "No State shall enter into any treaty" in; Article VI, clause 2: "This Constitution and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the authority of the United States, shall be the supreme Law of the Land;" in Article III, § 2: "The judicial Power shall extend to all cases in Law and Equity arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority;" and in Article II, § 2: "He [the President] shall have Power by and with the Advice and Consent of the Senate to make Treaties, provided two-thirds of the Senators present concur."

[31] On March 12, 1945, President Roosevelt transmitted the permanent Convention to the Senate for its advice and consent to ratification. The Convention was referred to the Committee on Foreign Relations, and hearings have been held by a subcommittee of that committee. The Convention has not yet been reported out of the committee.

[32] Ratification deposited on April 6, 1945.

[33] See McClure, International Executive Agreements (1941).

[34] On February 8, 1945, by acknowledging that the signatures on these agreements by the delegates of the United States constitute acceptance by the government of the United States and "obligations binding upon it," Department of State press release, February 9, 1945.

[35] These sections are the same and read as follows: "If any disagreement between two or more contracting States relating to the interpretation or application of this Agreement cannot be settled by negotiation, the provisions of Chapter XVIII of the above-mentioned Convention shall be applicable in the same manner as provided therein with reference to any disagreement relating to the interpretation or application of the above-mentioned Convention."

Article V of the Interim Agreement is subject to "the requirements of the constitutional processes" of the United States.[36]

We are concerned here with the internal, as distinguished from the external, effects of the international agreements. Since the permanent Convention has been submitted to the Senate for action, adherence by the United States will be by treaty. Therefore the type of international agreement we are interested in here is the treaty rather than the executive agreement. It is believed that from a ratification of this Convention as a formal treaty certain internal consequences may follow which possibly could not result from any other form of attempted adherence.

Under Article VI, clause 2, of the United States Constitution, both laws of Congress and treaties have authority as "the supreme law of the land," but with this important distinction: laws of Congress are "supreme" only if made "in pursuance of the Constitution," while treaties are so if made "under the authority of the United States."[37]

In *Missouri* v. *Holland* the question of the internal consequences of an international treaty was directly before the Court. This case dealt with a kind of flight regulation, not of airplanes but of birds. Migratory birds were protected under Department of Commerce Regulations promulgated pursuant to the Migratory Bird Treaty Act of July 3, 1918. This federal statute was passed to give effect to the convention of December 8, 1916, which was a treaty between the United States and Great Britain. The state of Missouri sought to prevent enforcement of these regulations on the ground that the act was an unconstitutional interference with the rights reserved to the states, an invasion of the sovereignty of the state of Missouri.

In rejecting this contention of the state of Missouri, Mr. Justice Holmes referred to Article VI, clause 2, of the Constitution and stated that

> if the treaty is valid there can be no dispute about the validity of the statute under Article I, Section 8 [of the Constitution] as a necessary and proper means to execute the powers of the Government. . . . . No doubt the great body of private relations usually fall within the control of the State, but a treaty may override its power.

The significance of the *Holland* case lies in the fact that, as stated in the opinion, "an earlier act of Congress that attempted by itself and not in pursuance of a treaty to regulate the killing of migratory birds within the States had been held bad in the District Court," citing *United States* v. *Shauver*[38] and *United States* v. *McCullagh*.[39] The similar act passed after

[36] This paragraph reads as follows: "The expenses of the organization shall be borne by the member States in proportions to be decided by the Assembly. Funds shall be advanced by each member State to cover the initial expenses of the Organization."

[37] 252 U.S. 416 (1920). [38] 214 Fed. 154 (1914). [39] 221 Fed. 288 (1915).

the treaty and intended to fulfil the obligations of the treaty, was upheld in the *Holland* case. In other words, here is an instance where an act of Congress, invalid as an unconstitutional invasion of state sovereignty, became valid when repassed in pursuance of a treaty. In this manner the federal government can, in a measure, "lift itself by its own boot straps"; it can enlarge its internal powers by entering into an international obligation, the discharge of which requires enlarged internal authority.[40]

The power of the federal government to discharge its treaty obligations, even if in so doing it violates the laws or policies of the states, has been recognized in many cases, of which at least *United States* v. *Curtiss-Wright Export Corp.*,[41] *United States* v. *Belmont*,[42] and *United States* v.

[40] A similar case involving the Dominion of Canada and the International Convention for the Regulation of Aerial Navigation is reported in 146 Law Times Rep. 76, Atty. Gen. of Canada v. Atty. Gen. of Ontario (1931). In this case, on appeal from the Supreme Court of Canada, after reciting the "necessary and proper" clause of the British North American Act (section 132, granting "The Parliament and Government of Canada all powers necessary or proper for performing the obligations of Canada or any province thereof as part of the British Empire towards foreign countries arising under treaties between the Empire and such foreign countries") and noting the obligations of Canada under the Convention, to fulfil which the Parliament of Canada enacted an "Air Board Act," under which detailed air regulations were promulgated, it was held that, as between the Dominion and the Provinces of Canada, "substantially the whole field of legislation in regard to aerial navigation belongs to the Dominion."

[41] 299 U.S. 304 (1936). In this case "an indictment was returned in the court below, the first count of which charges that appellees, beginning with the 29th day of May, 1934, conspired to sell in the United States certain arms of war, namely fifteen machine guns to Bolivia, a country then engaged in armed conflict in the Chaco, in violation of the Joint Resolution of Congress approved May 28, 1934, and the provisions of a proclamation issued on the same day by the President of the United States pursuant to authority conferred by Section 1 of the resolution." Among the defenses was that the joint resolution effected an invalid delegation of legislative power to the President. This point was sustained in the court below, but not by the Supreme Court. Mr. Justice Sutherland in the opinion of the Court, stated that "the investment of the federal government with the powers of external sovereignty did not depend upon the affirmative grants of the Constitution. The powers to declare and wage war, to conclude peace, to make treaties, to maintain diplomatic relations with other sovereignties, if they had never been mentioned in the Constitution, would have vested in the federal government as necessary concomitants of nationality. . . . . It is important to bear in mind that we are here dealing not alone with an authority vested in the President by an exertion of legislative power, but with such an authority plus the very delicate, plenary and exclusive power of the President as the sole organ of the federal government in the field of international relations—a power which does not require as a basis for its exercise an act of Congress, but which, of course, like every other governmental power, must be exercised in subordination to the applicable provisions of the Constitution. . . . . In the light of the foregoing observations, it is evident that this court should not be in haste to apply a general rule which will have the effect of condemning legislation like that under review as constituting an unlawful delegation of legislative power."

[42] 301 U.S. 324 (1937). This is one of the cases which arose out of the Litvinov assignment of certain claims, including a deposit with August Belmont, a New York banker. The assignment and the United States' recognition of the Union of Soviet Socialist Republics as the de jure government of Russia were coincident. The holding of the case was that because of this assignment and recognition of the government of Russia the deposit belonged to the United States regardless of the policies of the state of New York. The language of Mr. Justice Sutherland,

Pink[43] should be mentioned as interesting recent expression of the Supreme Court.

While these cases, too, touch upon the delicate and involved question of the status of executive agreements, we need not particularly concern ourselves here with this problem except to note that the powers of Congress to legislate, in order to effectuate a treaty, are much better recognized than its like powers under an executive agreement. It is not at all clear that under the latter type of international arrangement the states have the protection which it was intended they should have under the Constitution. It is one thing to say that the power of the Chief Executive in the international field is extraconstitutional, and quite another to conclude that as a consequence of an executive agreement, Congress acquires any authority above or beyond that delegated to it by the Constitution.[44]

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who delivered the majority opinion, is quite broad: "Plainly, the external powers of the United States are to be exercised without regard to State laws or policies . . . . . The same rule would result in the case of all international compacts and agreements from the very fact that complete power over international affairs is in the national government and is not and cannot be subject to any curtailment or interference on the part of the several states. In respect of all international negotiations and compacts, and in respect of our foreign relations generally, state lines disappear."

[43] 315 U.S. 203 (1942). This case also arose out of the Litvinov assignment. Here the United States sued to recover the assets of the New York branch of a Russian insurance company. A dismissal of the complaint was reversed. Here again the majority of the Court said (at p. 233) that "there are limitations on the sovereignty of the States. No State can rewrite our foreign policy to conform to its own domestic policies. Power over external affairs is not shared by the States; it is vested in the national government exclusively. It need not be so exercised as to conform to state laws or state policies, whether they be expressed in constitutions, statutes, or judicial decrees. And the policies of the States become wholly irrelevant to judicial inquiry when the United States, acting within its constitutional sphere, seeks enforcement of its foreign policy in the courts." The language of United States v. Belmont, supra, note 42, was approved. "State law must yield when it is inconsistant with, or impairs the policy or provisions of, a treaty or of an international compact or agreement" (p. 231), citing Nielsen v. Johnson, 279 U.S. 47 (1929). "Then, the power of a State to refuse enforcement of rights based on foreign law which runs counter to the public policy of the forum (Griffin v. McCoach, 313 U.S. 498, 506) must give way before the superior Federal policy evidenced by a treaty or international compact or agreement."

[44] See Levitan, Executive Agreements: A Study of the Executive in the Control of the Foreign Relations of the United States, 35 Ill. L. Rev. 365 (1940), particularly the following: "A careful evaluation of the function of the treaty-making power and of executive agreements reveals a fundamental distinction as to their effectiveness. Only international issues of which the domestic counterpart is within the range of Congressional authority can be dealt with satisfactorily by means of executive agreements. Executive agreements can be domestically validated as long as they deal with subjects within the legislative competence of Congress, for then Congress assures internal enforcement of the agreement. It must be remembered, however, that this is a federal state and that Congress has but limited authority. Many of the international problems are on the internal level beyond the competence of Congress to legislate; those problems can be dealt with only by treaty. The writer has shown elsewhere that any international question is a proper subject for a treaty. A treaty duly ratified is the supreme law of the land. Congress under the coefficient clause—the necessary and proper clause—can pass legislation necessary to carry out the treaty provisions. This is the basic significance of

It therefore appears that the ratification of the Chicago Convention as a formal treaty may have force and effect internally, quite apart from its international consequences. This is so because under the terms of this Convention, the United States assumes certain obligations actively to participate in the standardization of aerial-navigation practices and procedures on a world-wide basis, and because, to discharge these obligations, federal legislation on the domestic level may be necessary. To the extent necessary to the fulfilment of the obligations of the United States under the Convention, the powers of Congress derive from the treaty. Air rules and regulations adopted in pursuance of the Convention may be sustained even though, but for the Convention, they would be an unconstitutional invasion of State rights. The powers of the federal government to regulate aerial navigation need no longer be limited to those necessary to the protection of interstate or foreign commerce.[45] To the extent to which the Convention requires, State lines will disappear.

The particular effects which the ratification of the Chicago Convention may have on domestic air rules and regulations depend upon the terms of this Convention, for acts of Congress made in pursuance of the Convention will be valid only as they serve to discharge our national obligations thereunder. In so far as air rules and regulations are concerned, the purpose of the Convention is to establish a world-wide minimum standard. This intent is clear from Resolution II of the final act signed at Chicago.[46]

In the Convention itself there are many provisions aimed at securing this uniformity in air rules and practices. Under Article 12:

Missouri v. Holland, and it is this that guarantees the continued importance of the treaty-making power." See also note in 42 Col. L. Rev. 831 at 842 (1942): "There is another objection to superseding the treaty power, in addition to the question of whether it evades the Constitution. The President and Congress by agreement with some foreign nation, which may be small and insignificant, can destroy states' rights. Although the same holds true for the treaty power, by requiring two-thirds of the Senate to approve, the states are better protected, first from the political party in power and secondly from the larger states overpowering the smaller."

See also Corwin, The Constitution and World Organization (1944). For further comment on the Curtiss-Wright case see Patterson, In re the United States v. the Curtiss-Wright Corporation, 22 Texas L. Rev. 286 and 445 (1944), and Quarles, The Federal Government: As to Foreign Affairs, Are Its Powers Inherent as Distinguished from Delegated? 32 Georgetown L. J. 375 (1944).

[45] The constitutional authority for the Civil Aeronautics Act of 1938 is found in the commerce clause. Rosenhan v. United States 131 F. 2d 932 (1942), and United States v. Drumm, 55 F. Supp. 151 (1944); and see Fagg, Legal Basis of the Civil Air Regulations, 10 Journal of Air Law 7 (1939), and Shadle, Who Controls the Air, 36 Flying 29 (1945). See Binser, Civil Aviation—the Relative Scope of Jurisdiction of the State and Federal Government, 33 Ken. L. J. 276 (1945), Ryan, Economic Regulation of Air Commerce by the States, 31 Va. L. Rev. 479 (1945). See also sections 60.30, and 60.31 of the Civil Air Regulations.

[46] See note 18, supra.

Each contracting State undertakes to keep its *own* regulations in these respects [rules and regulations relating to flight and maneuver of aircraft] *uniform, to the greatest possible extent, with those established from time to time under this Convention.*[47]

Article 22 of the Convention expresses the agreement of each contracting state "to *adopt all practical measures*, through the issuance of special regulations or otherwise, *to facilitate and expedite navigation by aircraft* between the territories of contracting States." Article 28 states:

Each contracting State undertakes, so far as it may find practicable to:

(a) Provide, in its territory, airports, radio services, meteorological services and other air navigation facilities *to facilitate international air navigation, in accordance with the standards and practices recommended or established from time to time, pursuant to this Convention;*

(b) Adopt and put into operation the appropriate standard systems of communications procedure, codes, markings, signals, lighting and other operational practices and rules *which may be recommended or established from time to time, pursuant to this Convention;*

(c) *Collaborate* in international measures to secure the publication of aeronautical maps and charts *in accordance with standards which may be recommended or established from time to time, pursuant, to this Convention.*

Article 33 provides that

certificates of airworthiness and certificates of competency and licenses issued or rendered valid by the contracting State in which the aircraft is registered, shall be recognized as valid by the other contracting States, *provided that the requirements under which such certificates or licenses were issued or rendered valid are equal to or above the minimum standards which may be established from time to time pursuant to this Convention.*

Article 37 expresses a direct undertaking by each contracting State "to collaborate in securing *the highest practicable degree of uniformity* in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services *in all matters in which such uniformity will facilitate and improve air navigation.*" Under the provisions of Article 38 any state which finds it impracticable to comply in all respects with the international standard or procedure or to bring its own regulations or practices into full accord with any international standard or procedure, shall give immediate notification to the international organization of the differences between its own practice and that established by the international standard. Under Article 39 any aircraft or part thereof with respect to which there exists an international standard of airworthiness or performance and which fails to satisfy that standard, shall have indorsed on its certificate an enumeration of the details in respect to which it so fails, and any license which does not conform to the international standard

[47] Emphasis throughout is ours.

shall bear an indorsement of all its deficiencies. Article 40 contains the penalty for failing to meet the international standard. This article provides that

no aircraft or personnel having certificates or licenses so endorsed shall participate in international navigation, except with the permission of the State or States whose territory is entered. The registration or use of any such aircraft, or of any certificated aircraft part, in any State other than that in which it was originally certificated shall be at the discretion of the State into which the aircraft or part is imported.

Among the objectives of the International Civil Aviation Organization are to "insure the safe and orderly growth of international civil aviation throughout the world," and "meet the needs of the peoples of the world for safe, regular, efficient, and economical air transport." Among the mandatory functions of the council are these: to "adopt in accordance with the provisions of Chapter VI of this Convention, *international standards and recommended practices;* for convenience designate them as Annexes to this Convention; notify all contracting States of the action taken; consider recommendations of the Air Navigation Commission for amendment of the Annexes and take action in accordance with the provisions of Chapter XX."

Under Article 82 of the Convention all contracting states "accept the Convention as abrogating all obligations and understandings between them which are inconsistent with its terms and undertake not to enter into any such obligations and understandings."

Chapter xviii of the Convention relates to disputes among the contracting states and provides procedure for arbitration and appeal. Article 87, a part of this chapter, prescribes the penalty for nonconformity by an airline, and Article 88 the penalty for nonconformity by a contracting state. Under Article 87 each contracting state undertakes not to allow the operation of an airline of a contracting state through the air space above its territory *if the council has decided that the airline concerned is not conforming to a final decision rendered in accordance with the previous article.* Article 88 provides that the assembly shall suspend the voting power in the assembly and in the council *of any contracting state that is found in default under the provisions of this chapter.*

Under Article 90 (chapter xx) the Annexes, as adopted by the council, become effective *unless* affirmative action is taken by a majority of the contracting states to register their disapproval with the council.

The cumulative effect of the foregoing provisions of the Convention is sufficient, it is believed, to warrant the statement that, if the United States ratifies this Convention, it will have assumed positive duties and

will be obligated to take affirmative steps to bring its domestic air rules and regulations into conformity with international minimum standards which will be established by the world organization. To fail to do this would violate not only some of the express language of the Convention but also its plain meaning and intent, and would thwart one of the principal purposes of the world organization.

While the Technical Annexes, in their present form, will not at once, of course, supplant the Civil Air Regulations, they do disclose the present trend of world thought and the area of world agreement on the matters they cover. The United States doubtless will present suggestions for change, and so will many other interested nations. Hearings recently were held in Washington under the supervision of the Civil Aeronautics Administration, at which representatives of American aviation interests of many kinds studied the suggested drafts of the Annexes, and proposed some changes. Out of such discussions in this and many other countries technical air rules and regulations will be evolved which are practicable and safe internationally and to which most of the nations can conform their national practices.

Too, the CAR are constantly being revised and modernized.[48] In view of the international standard which the Annexes will embody, and the obligations of the United States to conform to this standard, it is fair to assume that in future modifications of the CAR the Annexes will have considerable influence.

It should be noted, too, that as a practical matter it will be difficult for any air-minded country to resist the trend toward international uniformity, even if it were foolish enough to wish to. In the United States we have seen that the air rules and regulations promulgated by the States tend to approach the federal standards.[49] This is entirely aside from any compulsion exercised by the federal government, and aside from any superiority inherent in the federal rules and regulations. Doubtless this tendency toward standardization on the higher over-all level will be a practical aid in conforming domestic air rules and regulations to the international standard.

[48] For instance, as reported in 36 Flying, in February, 1945, the National Association of State Aeronautical Officials has recently offered a model uniform act for state aeronautical departments. "The words 'cooperate' and 'coordination' appear throughout the model act when referring to Federal-State activities. Under the model uniform act, the states could establish safety rules provided they present no conflict with existing Federal Regulations." See also West, Let's Get Practical, 23 National Aeronautics, no. 4 (April, 1945).

[49] Relative to two new aeronautics acts now under consideration (the Lea and the McCarran bills) see Plaine, Air Code Changes, a Comparison of the Civil Aeronautics Act and Proposed Revisions, 23 National Aeronautics, no. 4, p. 18 (April, 1945).

A counterpart comparison of the present provisions of the Annexes and the CAR, as they exist at the moment, probably is not justified, at this time and place. Nevertheless some general observations relative to the similarities and differences which a comparison of these two sets of rules and regulations discloses are thought to be of value.

While there are many differences between the drafts of the Technical Annexes and the Civil Air Regulations of the United States, a study of the two does indicate many similarities, disclosing that wherever possible the Civil Air Regulations were used as the basis for the preparation of the Annexes. For instance, Annex C, Rules of the Air, is primarily based on Civil Air Regulation, Part 60, Air Traffic Rules; the Annex provisions relative to the certification of student pilots, private pilots, and commercial pilots are based on, and differ only in minor detail from, Civil Air Regulation, Part 20, dealing with the same subject matter; the Annex provisions with respect to aircraft dispatcher certificate is practically identical with Civil Air Regulation, Part 24, covering the same type of certificate; and the Annex provisions with respect to physical standards for airmen are in all respects identical with Civil Air Regulation, Part 29.

Whenever differences appear between the Annexes and the Civil Air Regulations, it can usually be said that the minimum requirements prepared at the Chicago Convention have been generalized for international workability, and are accordingly much less detailed than the Civil Air Regulations. Yet, in a comparison of the provisions of the Annex dealing with airline transport pilot certificates with the corresponding Civil Air Regulations, which are in Part 21, the requirements of Part 21 appear less stringent. This is necessary, owing to the greater scope and range of international air navigation. Some variations result, too, from the fact that many of the Annexes reflect American technical knowledge and experience even more recent than that presently contained in the Civil Air Regulations.

Among the provisions of the Annexes which are not suitable for comparison here is Annex G, Airworthiness Requirements for Civil Aircraft Engaging in International Air Navigation. This Annex deals in general with requirements for airplane airworthiness, engine airworthiness, propeller airworthiness, and equipment airworthiness. Comparable provisions of the CAR are found in Parts 04, 13, and 14. The comparison of these provisions should be undertaken only by qualified aeronautical engineers. A very exhaustive and interesting paper was delivered on this general subject last January before the War Engineering-Annual Meeting of the Society of Automotive Engineers, by Edward Warner, vice-chairman of the

Civil Aeronautics Board. For our purposes here we believe it will suffice to quote the following from this paper:

> When a group of engineers set to work five months ago on the preparation of a first draft of a possible code of airworthiness requirements for international use, the obstacles to any partial treatment, concentrating upon a few high spots of special significance, appeared so compelling that they substantially abandoned the attempt to define any such limit for their work. They concluded by preparing a draft which was with relatively few exceptions .... co-extensive with the existing American code as set forth in Part 04 of the Civil Air Regulations as adopted by the Civil Aeronautics Board. In many respects—though not by any means in all—it was identical with the American requirements currently in force.

For further technical comments with respect to this Annex G, see article by Franklin D. Walker in *Flying* for June, 1945.[59]

Hearings are presently being held in the United States, and possibly elsewhere, for the purpose of preparing proposed amendments to many of the Annexes. Even though the Annexes as finally adopted by the council of the International Civil Aviation Organization may differ from the original draft, it is believed the differences will not be fundamental. Their force and effect for the purposes of this article are expected to be about the same.

In conclusion, we believe that the time has arrived when air rules and regulations must be standardized, not only on the national, but also on the international, level. In due course the air regulations set forth in the Annexes of the International Civil Aviation Convention will become the international standard and the minimum national standards for the member nations. We believe and hope that the Chicago Convention will be ratified by the United States, and that such ratification will take the form of a treaty. Congress will thereby be empowered to take all steps necessary to conform national flight practices and procedures to the international standard.

The consequences of this are all to the good. We see no valid fundamental objection to the elimination of state lines, insofar as most air rules and regulations are concerned. National uniformity in such matters will avoid much confusion and uncertainty, materially encourage private aviation, foster intrastate, interstate, and international air transport, and fulfil some of the obligations of this country to promote international good will and peace.

[59] Vol. 36, no. 6.

PATENTS: JUDICIAL DEVELOPMENTS AND LEGISLATIVE PROPOSALS*

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THERE are some things about the patent system that can never be known as fully and directly as one might desire, e.g., whether or not it has operated on the whole to retard technological development in the United States. On the other hand, there are many important things about the patent system that can be and are known. The system has been in operation for over 150 years, and in that time it has produced, as a glance at the digest of federal cases will show, more litigation than any other subject of federal jurisdiction except taxation and bankruptcy. From an examination of some of this litigation and consideration of the nature of science, technology, and invention, it appears that the subject matter is such as to make a fair decision in any vigorously disputed case concerning priority, validity, or scope of invention extremely difficult, if not impossible. This is true, in brief, because in an extremely significant sense, there is seldom *an* invention or *a single* inventor. In its attempt to grant rewards to single inventors for single inventions, therefore, the patent system seems to have essayed the impossible. And from this attempt a multitude of evils have resulted.

One can also know that the patent system has been one of the principal factors in the growth of private monopoly power in the United States. For this there is sufficient proof in the reported cases and in the facts that have come to light in recent years. On the premise that monopoly power tends to inhibit the vigor which competition tends to stimulate, it is possible to conclude that the patent system, since it is in large measure responsible for our monopolies, has inhibited industrial growth and socially desirable exploitation of invention. Such unfortunate consequences of the patent system, and many others, are treated in some detail in the body of this paper. An attempt is here made to trace a kind of natural history of the patent system and to place it in its living position in the economy of which it is an extremely important part.

One of the most sacred of contemporary sacred cows, the patent system has had no significant legislative alteration in more than a hundred years.

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The same can be said of other vital politico-economic institutions. And the net result has been a radical departure of political and economic fact from the political and economic theory which is often said to dominate American thinking. Ridiculously fearful lest the national government should become too powerful, we have allowed, and even forced, private groups to assume power and authority far beyond the danger point. This is as true with respect to patents as it is, for example, with respect to corporations and labor unions. Several proposals for reform of the patent system have been submitted recently. A political theory is premised in this paper, and the proposals are examined against that theory.

I

"These extracts from Court decisions have been given at some length with the thought that, by giving the reader, interested in modern telephony, an opportunity to read the language used in them, he can perhaps, better than in any other way, form a conception of the nature of the litigation that finally resulted in Alexander Graham Bell being fully sustained as the inventor of the telephone." This statement ends chapter iv of the book, *Beginnings of Telephony* (1929), written by Frederick Leland Rhodes, an electrical engineer employed by the American Telephone & Telegraph Company. While Mr. Rhodes did quote at length from various inferior federal court decisions, the quotations were selected in a manner which reveals that the devices commonly associated with the lawyer are not unknown to other engineers. For one thing, Mr. Rhodes avoids any emphasis of the most important decision in the whole telephone-patents controversy, the only Supreme Court case which takes up a full volume of the reports. And he fails completely to mention that that decision, upholding the Bell patents, went by a four to three majority, with Associate Justices Field, Bradley, and Harlan dissenting.[1]

The quotations employed by Mr. Rhodes and the general slant of his exposition give a one-sided picture of the telephone-patents controversy—a picture in which the doubtful aspects of the litigation and final settlement are minimized, when they are mentioned at all. The facts in the controversy here recounted are presented primarily to provide insight into the operation of the American patent system. If the narrative tends to cast doubt upon the validity of Bell's claim to fame as the sole and original inventor of the telephone, that result is simply an unfortunate by-product of an attempt to show that the patent system, by purporting to

[1] The Telephone Cases, 126 U.S. 1–584 (1888). Involving several parties, the cases nevertheless revolved around one issue—whether or not the patents granted to Alexander Graham Bell were valid.

grant exclusive rewards for inventions, has essayed a task which events seem to prove impossible of execution without consequent confusion, conflict, and litigation extensive enough in themselves to induce grave question as to the net worth of the system. The telephone controversy arose from no peculiarly complex technological problems. More abstruse problems arise daily in the Patent Office, and they cause the same kind of trouble. The telephone controversy is chosen for description here simply because more of the facts are available and because the lapse of years affords a perspective for evaluation of the labors involved in establishing the rights granted by the Patent Office.

On February 14, 1876, Alexander Graham Bell filed with the United States Patent Office an application for a patent on "certain new and useful Improvements in Telegraphy." On the same day, Elisha Gray filed a *caveat* (a notice of an invention not yet completed) which begins as follows:

> Be it known that I, Elisha Gray, of Chicago, have invented a new art of transmitting vocal sounds telegraphically. . . . . It is the object of my invention to transmit the tones of the human voice through a telegraphic circuit, and reproduce them at the receiving end of the line, so that actual conversations can be carried on by persons at long distances apart.

"To attain the objects of my invention," Gray's *caveat* continues, "I devised an instrument capable of vibrating responsively to all the tones of the human voice, and by which they are rendered audible."[2]

In contrast to Gray's deliberate and forthright statement of the intention to transmit speech, Bell's application nowhere speaks of transmitting speech; it is preoccupied with the problems of transmitting multiple telegraphic signals over a single wire, although it clearly appears from Bell's statements that the *possibility* of transmitting other sounds, including the sound of the human voice, was recognized by him. The relevant portions of Bell's application are as follows:

> The duration of the sound may be used to indicate the dot or dash of the Morse alphabet, and thus a telegraphic despatch may be indicated by alternately interrupting and renewing the sound. . . .
>
> I desire here to remark that there are many other uses to which these instruments may be put, such as the simultaneous transmission of musical notes, differing in loudness as well as in pitch, and the telegraphic transmission of noises or sounds of any kind.
>
> One of the ways in which the armature *c* Fig. 5, may be set in vibration has been stated above to be by wind. Another mode is shown in Fig. 7, whereby motion can be imparted to the armature by the human voice or by means of a musical instrument.

[2] 126 U.S. 1, 78–80 (1888).

In the last paragraph of his application, Bell claimed "The method of, and apparatus for, transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations, similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth."[3]

There is a very simple reason why Bell may have adopted such a hedging tone in his application: He had never been able, prior to the date of his application, to transmit speech with his device. (Neither, for that matter, had Gray.) The famed "Mr. Watson, come here; I want you" was not accomplished until March 10, 1876—three days after a patent was issued on the application of February 14, 1876.

This leads one to wonder why Bell should have applied for a patent when and as he did—when his lack of success in transmitting speech made it necessary for him to make his claim in such an ambiguous way. One possible explanation for Bell's conduct lies, of course, in the fact that he was aware that others were working in telephony. He knew, for example, that Gray was also working in the field. In a letter of August 14, 1875, written to one of his backers, Bell asked: "Don't you think it would be well to take out a caveat for the use of the magneto-electric current? In its present undeveloped state, it might be unwise to let Gray know anything about it, unless, indeed, we could secure the principle of it in a patent."[4] There were, and had been for some time, moreover, a number of other people working on the application of Faraday's principles of electromagnetic induction to the problem of transmitting speech by wire. One example of the thinking in the field was published by M. Charles Bourseul in 1854—twenty-two years before Bell's patent was issued. After discussing the applications of Faraday's principle to telegraphy, and speculating on further phenomena made possible by electro-magnetic induction, Bourseul went on:

> I have asked myself, for example, if the spoken word itself could not be transmitted by electricity; in a word, if what was spoken in Vienna may not be heard in Paris? The thing is practicable in this way:
>
> We know that sounds are made by vibrations, and are made sensible to the ear by the same vibrations, which are reproduced by the intervening medium. But the intensity of the vibrations diminishes very rapidly with the distance; so that even with the aid of speaking tubes and trumpets, it is impossible to exceed somewhat narrow limits. Suppose that a man speaks near a movable disk, sufficiently flexible to lose none of the vibrations of the voice; that this disk alternately makes and breaks the connection with a battery; you may have at a distance another disk which will simultaneously execute the same vibrations.[5]

[3] Ibid., at 6–14. [4] Printed, ibid., at 218. [5] Reprinted, ibid., at 31–2.

Thus, acquaintance with Gray's work and other developments following Bourseul may account completely for Bell's haste and the ambiguity of his application of February 14, 1876.

But Bell and his backers were accused of more sinister conduct. In an action brought by the Government for annulment of the Bell patents charges were made that Bell's researches and experiments warranted an application covering, as his actually stated, *only* "Improvements in Telegraphy." The Government contended that Bell could not originally have had reference to a patent covering the transmission of speech, simply because he had never transmitted speech as of the date of his application. It charged, moreover, that those parts of Bell's application which were held to cover the art of transmitting speech were not a part of the original application, but were inserted only after employees of the Patent Office illegally revealed to him the methods and objects of Gray's *caveat*.[6] Bell then proceeded, according to the Government's complaint, "to make substantial amendments of his .... specification and claims."[7] And these amendments, the Government charged, "related to those parts of ..... Bell's alleged invention which he and his assigns have since claimed as the cardinal element and feature of his patent."[8] The Bell patent was issued on March 7, 1876, just three weeks after his application had arrived in the Patent Office simultaneously with Gray's *caveat*. This speed of issuance is the more remarkable in view of the fact that an interference had been declared between Bell and Gray. The Government charged, on this score, that Bell's patent was issued with "undue and unusual haste, and without proper consideration and in violation of the rights secured by .... Gray, or of the rights and interests of the citizens of the United States, with respect to the art of telephony....."[9]

Whether or not these charges were founded in fact is impossible to say; there is not even a final judicial opinion on the matter, since, while the charges were made in a formal action by the Government, the case was never finally adjudicated. Having traveled up and down the judicial hierarchy on the question of whether the Government has a right to an action for annulment of a patent, and having hit several other snags on the district court level, the case was dropped in 1896—after the disputed patents had expired and counsel in charge of the Government's case had died.[10] In fairness to Bell it should be added that the Supreme Court did

[6] United States v. Bell Telephone Co., 128 U.S. 315, 316–20 (1888).

[7] Ibid., at 320. [8] Ibid. [9] Ibid.

[10] See the volume published by the American Bell Telephone Company, entitled, The Deposition of Alexander Graham Bell in the Suit Brought by the United States To Annul the Bell Patents, at p. 2 (1908).

pass in *The Telephone Cases* on part of the charges made by the Government. Presented with some of the charges by private litigants, the Court held the evidence which tended to support them "not sufficient to brand Bell and his attorney and the officers of the Patent Office with that infamy which the charges made against them imply."[11]

Writers sympathetic with the Bell System have contended that the Government was prevailed upon, through political influence, to bring the action for annulment. Mr. Rhodes, for example, stating that the suit was instigated by the Pan Electric Telephone Company, points out that Pan Electric's board of directors included two United States Senators and that its counsel was Attorney General when the action was brought.[12] Herbert N. Casson, paid by A.T.&T. to write *The History of the Telephone*,[13] said in that book that Bell's rivals

> next planned to get through politics what they could not get through law; they induced the Government to bring suit for the annulment of the Bell patents. It was a bold and desperate move, and enabled the promoters of paper companies to sell stock for several years longer. The whole dispute was re-opened, from Gray to Drawbaugh. Every battle was re-fought; and in the end, of course, the Government officials learned that they were being used to pull telephone chestnuts out of the fire. The case was allowed to die a natural death, and was informally dropped in 1896.[14]

Although it seems obvious that he has treated the Government's case cavalierly, it is unnecessary to take issue with Casson. Similarly, Rhodes's insinuations may be left unrebutted. For present purposes it *is* necessary, however, to note that the Government's case was instituted in 1886, two years before some of the charges in its complaint were rejected by the Supreme Court, when those charges were brought by private litigants.[15] Now, there are at least six reported opinions on one or another aspect of the Government's case,[16] and, while this ten-year proceeding may have been a "bold and desperate move," as Casson asserts, the fact remains that it was made possible and plausible by the inherent character of the patent system. The queer wording of Bell's application of February 14, 1876, even if it be construed most favorably to Bell, is the type of thing

[11] 126 U.S. 1, 570 (1888).

[12] Rhodes, Beginnings of Telephony 70–75 (1929).

[13] See Danielian, A.T.&T.: The Story of Industrial Conquest 292–93 (1939).

[14] Casson, The History of the Telephone 99–100 (1910).

[15] The first hearing reported was United States v. American Bell Telephone Co., 29 Fed. 17 (D.C., Ohio, 1886).

[16] United States v. American Bell Telephone Co., 29 Fed. 17 (D.C., Ohio, 1886); same, 30 Fed. 523 (C.C., Mass., 1887); same, 32 Fed. 591 (C.C., Mass. 1887); same, 128 U.S. 315 (1888); same, 39 Fed. 230 (C.C., Mass., 1889); same, 39 Fed. 716 (C.C., Mass., 1889).

inevitably provoked by the patent system's holding out an exclusive reward for inventions to one inventor. Since technological advance proceeds from the findings of "pure" scientific research, which are available to anyone interested, and since there are usually many men working on the practical application of known principles, under the patent system conflict between inventors similarly engaged is therefore inevitable. Again, the character of scientific research and technological application is such that the problem of carving out a particular development and labeling it an invention for which a patent should be issued, cannot help creating confusion and conflict. As Bell's experience indicates—regardless of how it be construed—it is often impossible to predict what developments may accrue from a given process or device. It is no answer to say that the first applicant should be given a monopoly right to every conceivable practical application of his device, for that is substantially what happens under the present patent system; and it is precisely that "solution" which creates the uncertainty, confusion, and, finally, the overwhelming litigation, of which we have had only a small sample thus far in this investigation of the telephone controversy.

As of 1910, when Casson published his book, he reported that the Telephone Company had been involved in 587 lawsuits, and his comment thereupon was that its experience was "an unanswerable indictment of our system of protecting inventors."[17] This comment, like so many in Casson's book, is important more for what it implies than for what it states—and again like other statements in the book, it covers over more facts than it reveals. The comment implies that the patent system has no trouble establishing inventorship; at least that it had no trouble establishing Bell's. Indeed, Casson seems occupied primarily with allaying any doubts which might exist or arise concerning the justice of awarding to Bell the sole and exclusive right in telephony. And his method, common with such writers, is that of repetition, garlanded with poetry and bare of fact. According to Casson, Bell was the "original inventor," the "sole inventor," and the "first cause" of the telephone. "There was no telephone until [Bell] made one," Casson asserts.[18] "He invented it first, and alone."[19] It was only after Bell's telephone achieved popular success that rival claimants appeared, Casson complains, and "the forgetful public came to believe that the telephone, like most inventions, was the product of many minds."[20]

Now the sale (or lease) of the first telephone occurred on May 10,

[17] Casson, The History of the Telephone 100 (1910).

[18] Ibid., at 105. [19] Ibid., at 107. [20] Ibid., at 78.

1877,[21] and sometime in the same year Professor A. E. Dolbear, of Tufts College, copyrighted a book entitled, *The Telephone: An Account of the Phenomena of Electricity, Magnetism, and Sound, as Involved in Its Action, with Directions for Making a Speaking Telephone.* In this book, Dolbear traced the growth of the telephone from widely known principles of electricity, magnetism, and sound. The phenomenon of electro-magnetic induction—which underlies the successful transmission of sound over wires—Dolbear pointed out, was made known to the world by Oersted and Faraday. In the 1850's, Helmholtz explored the phenomena of sound. And as we have seen, Bourseul put Faraday and Helmholtz together in 1854. Finally, and with a certain measure of inevitability, a German physics teacher, Philip Reis, reduced Bourseul's conception to a primitive type of practice in 1861, at least ten years before Bell had even dreamed of transmitting speech over wires.

The case of Reis illustrates the extreme uncertainty inevitable in any attempt to grant exclusive awards for inventions. One of the defenses to the infringement suits brought by the Bell people was that the Bell patent was invalid because his invention constituted only a mechanical advance over the discoveries of Reis. The following quotations from the majority opinion of the Supreme Court indicate how nicely balanced the questions in patent litigation may become. "That Reis knew what had to be done in order to transmit speech by electricity is very apparent," said Mr. Chief Justice Waite.[22] And again: "He could sing through his apparatus, but he could not talk."[23] At this point it should be remembered that Bell could neither sing nor talk over his device when he applied for a patent on "new and useful Improvements in Telegraphy."[24] The reason for preferring Bell to Reis lay deeper, however, than the mere ability or inability to transmit speech. As the Court pointed out, Reis had not perceived that speech could be transmitted only if a constant current were maintained over the circuit.[25] His device operated in an intermittent circuit, which rendered impossible the transmission of all the delicate vibrations of speech, whereas Bell's invention consisted in maintaining a constant current and incorporating an armature free at one end to relay the vibrations

[21] Ibid., at 52.

[22] The Telephone Cases, 126 U.S. 1, 540 (1888).

[23] Ibid. Cf. the publications quoted, ibid., at 55–6 et seq.

[24] See the opinion of the majority of the court in The Telephone Cases, ibid., at 535. The fact that Bell had not transmitted speech until after his patent was issued is beyond dispute; even Casson admits it. See The History of the Telephone 32–3 (1910).

[25] See the opinion of the majority in The Telephone Cases, 126 U.S. 1, 544–45 (1888). Bell was acquainted with what Reis had done in telephony. See op. cit. supra, note 10, at 258–63.

from the diaphragm to the wire, in the transmitter, or from the wire to the diaphragm, in the receiver.

In a paper published in 1861, fifteen years before Bell's patent was issued, Reis professed more success in the transmission of speech than Bell had achieved before his patent was issued: "Hitherto it has not been possible to reproduce the tones of human speech with a distinctness sufficient for every one," Reis said. "The consonants are for the most part reproduced pretty distinctly, but the vowels as yet not in an equal degree."[26] So close was Reis to Bell's alleged discovery of the necessity of a closed circuit, that upon occasion his device would transmit speech—at least as well as Bell's had on March 10, 1876—when it was inadvertently jammed or mishandled, thus maintaining a constant current.[27] And Professor Charles R. Cross, expert witness for the Bell Telephone Company, testified that the Reis instrument could equal the performance of an improved version of the Bell instrument with no other change than the adjustment of a screw.[28]

There are other facts which challenge the accuracy of the statement that Bell was the sole and lone inventor of the telephone. As the title of Dolbear's book indicates, he had himself produced a telephone (in the summer of 1876), and it was acknowledged by all as superior to Bell's. But Dolbear's invention was held to be merely an improvement on Bell's discovery that a constant current is a prerequisite to the transmission of speech. Hence, it could be used only if licensed by the Bell Company, and since the Bell Company extended no licenses to enterprisers who wished to remain independent, users of the Dolbear instrument were subject to infringement suit. This accounts for some of the 587 suits in which the Bell Company was involved prior to 1910.

Attention here has been restricted to only a few of the men who had been working prior to or contemporaneously with Bell on the problems of telephony. A roll call of some of the men actively engaged in the telephonic field may better convey the extent of the interest in that field. Besides Bell, Reis, Gray, and Dolbear, significant work was done by Edison, Blake, Phelps, Berliner, McDonough, Varley, and Van der Wyde. For a more adequate picture of the activity in the field, reference may be had to volume 126 of the *Supreme Court Reports*, where a large number of publications dealing with research in telephony before Bell's discovery are

[26] See the publication reprinted in 126 U.S. at 190–91.

[27] See MacMeal, The Story of Independent Telephony 7 (1934).

[28] See Interrogation 59x and answer, cited in 126 U.S. 1, 201; X-Int. 135 et seq. and answers, ibid., at 202–3.

either cited or reprinted in part. Acquaintance with these materials and with the basic contributions of Faraday, Helmholtz, Bourseul, and Reis makes Casson's statement that Bell invented the telephone "alone" poor poetry at best.

It remains now to review more material which, in addition to that concerning Reis, renders doubtful Casson's other statement, namely, that "there was no telephone until Bell made one." This material should illustrate further the inescapable difficulties inherent in the attempt of the patent system to reward one inventor to the exclusion of all others.

Whether or not Daniel Drawbaugh actually anticipated Bell in the production of a successful telephone, one-sided analysts have distorted the historical record with respect to both Drawbaugh's character and the merits of his contention of priority. "The fact about Drawbaugh," says Casson, "is that he was a mechanic in a country village near Harrisburg, Pennsylvania. He was ingenious but not inventive; and loved to display his mechanical skill before the farmers and villagers. He was a subscriber to *The Scientific American;* and it had become the fixed habit of his life to copy other people's inventions and exhibit them as his own."[29] Rhodes distorts the record by quoting, as a self-characterization by Drawbaugh, a biographical sketch which had probably been written by an enthusiastic provincial journalist.[30] This is the way Rhodes presents the characterization: "Drawbaugh described himself as 'one of the greatest inventive geniuses of this age, who has spent the greater part of an active life conceiving and producing, as the result of the conceptions of an unusually fertile brain, a score of useful, ingenious machines and devices.' "[31]

With this characterization of Drawbaugh, one may compare that established by the testimony of his neighbors, who described him as sober, truthful, and industrious.[32] And against the charge that Drawbaugh was a charlatan, which seems to have figured largely in the judicial opinions deciding against him, may be placed the facts that he lived in one community all his life, counted the governor of the state among his friends, and had no trouble getting hundreds of members of that community to testify to their respect and admiration for him.

But what is more important, practically an entire community testified that they had, at least five years before Bell's invention, either seen, heard

[29] Casson, The History of the Telephone 98 (1910).

[30] Uncontroverted evidence adduced by Drawbaugh's counsel. See 126 U.S. 1, 359 (1888).

[31] Rhodes, Beginnings of Telephony 66 (1929).

[32] For the facts on Drawbaugh here adduced, see 126 U.S. 1, 331 et seq., especially at 339, 356 et seq. None of the actual testimony was controverted. See the arguments of opposing counsel and the majority and minority opinions in the Supreme Court.

of, or heard through the telephone which Drawbaugh contended he had reduced to practice as early as 1867.[33] The witnesses were of all classes: poor and ignorant, well to do and sophisticated. And though the Bell people had later planted spies in the community, they were unable to find any evidence of collusion—even though they employed as agents some of the members of the community.[34] It is impossible to reproduce here the total effect of the evidence concerning Drawbaugh's claim—for that only a full reading of the record will do. But the main arguments for and against Drawbaugh must be adduced in order to demonstrate the character of the criteria and the type of analysis made necessary by the patent system.

One of the main objections to Drawbaugh, as the inventor of the telephone, was that his comparatively thin formal education and the character of his prior inventive efforts made it inherently incredible, to the Bell lawyers and the deciding judges, that he could have conceived, or, even more, have executed, such a consummate achievement as the speaking telephone. As illustrative of the judicial formulation of these objections, one of the quotations culled by Mr. Rhodes in presenting Drawbaugh's case to the readers of his book may be set out here:

> Drawbaugh . . . . was not only untutored, but he was isolated by his associations and occupations from contact with men of advanced science; he had narrow opportunities for instruction, and few incentives for profound research . . . . ; he was a tyro in electrical science, essaying the most difficult work of the electrician. It is almost incredible that the subtle intellectual discoveries which were a closed book to the ablest electrician could have been reached by a smatterer in science.[35]

The encomia given Bell reveal by way of paradox the inadequacy of this approach. What Bell had done, says Casson, "was so amazing, so foolhardy, that no trained electrician could have thought of it. It was 'the very hardihood of invention.' . . . ."[36] Elsewhere Casson speaks of Bell as having "picked up a smattering of anatomy, music, electricity, and telegraphy."[37] As late as 1875, when Bell is said to have completed all but minor details of his invention, he is reported to have complained, when urged to develop his ideas: "But I have not got the electrical knowledge that is nec-

[33] Between three and four hundred witnesses testified for Drawbaugh. See the majority opinion, ibid., at 555.

[34] See the uncontroverted evidence adduced in argument. Ibid., at 337–40.

[35] Wallace, J., in American Bell Telephone Co. v. People's Telephone Co., 22 Fed. 309, 329 (D.C., N.Y., 1884). Quoted in Rhodes, Beginnings of Telephony 66(1929). The deletions in this quotation are Rhodes's.

[36] The History of the Telephone 34–5 (1910).

[37] Ibid., at 16.

essary."[38] And again, after he had achieved success: "Had I known more about electricity, and less about sound, I would never have invented the telephone."[39] The opinion of a contemporary physicist is that Bell "did not realize what tiny amounts of energy he was planning to control. If he had, he might have been too discouraged to begin."[40]

Also relevant here is the observation of Drawbaugh's counsel, who said: "We believe it can be shown that successful inventors are not the product of universities."[41] Among the examples in support of his contention, counsel cited Michael Faraday, whose formal education began and ended with a few lectures by Sir Humphrey Davy. Faraday's subsequent experimental researches, according to an English physicist, gave a great deal of trouble to his more educated contemporaries who "were unable to avoid mistakes in stating, in what they conceived the more scientific language than Faraday's, the phenomena before them."[42]

To reach the all or none conclusion required by the patent system, the courts were forced to disregard or minimize the importance of several facts which indicate that Drawbaugh's vision may well have been equal to Bell's. He had access to and read books recounting fundamental discoveries in physics and chemistry, and others showing the applications of research to useful arts. He was an ingenious fellow. He displayed the poetic frenzy of profound concentration and application, was selflessly generous (and nagged by his wife)—characteristics (except the last) rhythmically displayed in descriptions of Alexander Graham Bell. And prior to 1860 he had, like Faraday, attended a course of lectures by a college professor of physics, who testified that at that early time Drawbaugh had shown keen interest in electrical science and had talked of "speaking through a telegraph wire by electricity."[43]

This first ground for rejecting Drawbaugh seems an example of juridical "psychology" at its worst. To rest the claim to an invention in any degree on such a criterion as the "educated vision" of the claimant would be dangerous even if consistently employed. For "imagination," "vision," "conception" are ideas which give even literary philosophers many a painful moment. And yet, if patents are to be issued, and the consequences of their possession are to remain what they have been, conflicts of great mag-

[38] Ibid., at 30.

[39] Ibid., at 39.

[40] Harrison, Atoms in Action 47 (1939).

[41] The Telephone Cases, 126 U.S. 1, 350 (1888).

[42] J. Clark Maxwell, Professor of Physics at Cambridge, in Maxwell on Electricity. Cited in 126 U.S. 1, 352. One is reminded of Ben Jonson's patronizing reference to William Shakespeare, who had small Latin and less Greek.

[43] 126 U.S. 1, 356–57.

nitude are certain to arise and criteria such as the foregoing must figure in the disposition of the cases. Indeed, according to the explicit statement of the Supreme Court, Drawbaugh's failure to measure up to such a criterion was predominantly responsible for its decision against him. Despite the persuasiveness of Drawbaugh's many witnesses, the Court said his failure publicly to contest Bell's claim for nearly four years after the world had known of it was conclusively against his prior inventorship:

> We have not overlooked the depositions that have been taken in such large numbers to show that Drawbaugh was successful. . . . . They have been studied with care, and if they contained all the testimony in the case it would be more difficult to reach the conclusion that Drawbaugh's claim was not sustained. But in our opinion their effect has been completely overcome by the conduct of Drawbaugh, about which there is no dispute, from the time of his visit to the Centennial [where Bell's telephone was on exhibition] until he was put forward by the promoters of the People's Company, nearly four years afterwards, to contest the claims of Bell.[44]

Such conduct the Court found contrary to human nature: "No man of his intelligence, with or without the enthusiasm upon the subject which it is said he possessed, could have remained silent under such circumstances."[45] Yet there was uncontroverted evidence that Drawbaugh had approached different men for aid in publicizing his invention in 1878. There was a veritable mountain of evidence that people had seen, heard, and talked through Drawbaugh's device on and off from as early as 1869. He had been ridiculed, and, later, advised that he could not antedate Bell.[46]

More of Bell's experience is relevant here. His enthusiastic supporters have deplored the lethargy displayed with respect to his telephone. It lay on exhibition at the Philadelphia Centennial Exposition "for more than six weeks, without attracting the serious attention of anybody."[47] Indeed, except for the occurrence of a "marvelous" accident, it might have gone unnoticed by the commissioners, who had, according to Casson, given it only blank stares until Bell's friend, the Emperor of Brazil, burst in on the tableau and enthusiastically drew their attention to it.[48] "This incident in itself," says Rhodes, "served to direct the attention to Professor Bell and his exhibit."[49] While this may be more poetry, there is the further fact that one must "look in vain," as A.T.&T. vice-president John J. Carty

[44] Majority opinion, ibid., at 565.

[45] Ibid., at 562.

[46] Ibid. See also, ibid., at 347 et seq.

[47] Casson, The History of the Telephone 37 (1910).

[48] Ibid., at 37–8.

[49] Rhodes, Beginnings of Telephony 31 (1929).

put it, for mention of the Bell Telephone in the two-volume report of the Centennial.[50] For a year after the Centennial, moreover, the only public notice Bell got was derisive. "Poor Bell, instead of being applauded was pelted with a hailstorm of ridicule. He was an 'impostor,' a 'ventriloquist,' a 'crank who says he can talk through a wire.' "[51] Businessmen called Bell's telephone a scientific toy. The *London Times* termed it the "latest American humbug."[52] There is the final fact that not a single telephone was sold for more than a full year after Bell received his patent; Bell had trouble giving them away.[53] Is it not possible that a similar reception by those introduced to Drawbaugh's device, together with a thousand other possible incidents, could have suppressed its publication? Drawbaugh was not in the beginning subject, as Bell was, to the pressures of businessmen who had financed his experiments with the understanding that they should share in the results. And when businessmen did get hold of Drawbaugh, they gave him plenty of publicity.

Whether or not Drawbaugh anticipated Bell is not important here. The important point is that determining priority of invention, as the patent system requires, makes necessary a type of procedure which cannot but approach arbitrariness. That human beings have a nature, and that it is in a general way knowable, cannot be denied. But that the detailed possibilities of human conduct can be predicted or assessed on the basis of this unknown though knowable human nature, seems at present absurd. The courts essay a bootless job, so far as tenable objectives such as equitable allocation of rewards for invention are concerned, in attempting to define either an "invention" or an "inventor." While one may concur in the decision of a given case, the criteria necessarily employed provoke an arbitrariness of analysis which sweeps through all the cases like a strong midchannel current, and concurrence in the decision of the one case is, therefore, swept forward to the conclusion that a right decision in the average case is more or less an accident.

The extent to which the award of letters patent may approach the arbitrary is most forcefully illustrated by the attitude displayed toward Drawbaugh's witnesses. At bottom, the decision between Bell and Drawbaugh must have rested upon whether or not the latter's witnesses were believed. Over two hundred people testified that they had seen, heard, or talked through his instruments. And this is the way District Judge Wallace, quoted at great length by Rhodes, disposed of them:

[50] Quoted, ibid., at 33.

[51] Casson, The History of the Telephone 42–3 (1910).

[52] Ibid., and see at 50–51. [53] Ibid., at 52–3.

> [The witnesses] have confused the fragmentary and incoherent articulation of such an apparatus, with the hearing of distinct words and sentences. . . .
>
> Succinctly stated most favorably for [Drawbaugh and his backers] the case is this: One hundred witnesses, more or less, testify that on one or more occasions, which took place from five to ten years before, they think they saw this or that device used as a talking machine. They are ignorant of the principles and of the mechanical construction of the instruments, but they heard speech through them perfectly well, and through one set of instruments as well as the other.[34]

The majority of the Supreme Court adopted an even more startling attitude toward the witnesses. In effect it ignored them. It said, as we have seen, that "their effect has been completely overcome" by Drawbaugh's unnatural conduct.[35]

Though Rhodes quoted from both the district court and the majority opinion in the Supreme Court, he ignored the dissenting opinion of Justices Field, Bradley, and Harlan. The following quotations may explain the omission:

> We think that Drawbaugh anticipated the invention of Mr. Bell, who, at most, is not claimed to have invented the speaking telephone prior to June 10th, 1875. We think that the evidence on this point is so overwhelming, with regard both to the number and character of the witnesses, that it cannot be overcome. . . .
>
> We are satisfied from a very great preponderance of evidence, that Drawbaugh produced, and exhibited in his shop, as early as 1869, an electrical instrument by which he transmitted speech, so as to be distinctly heard and understood, by means of a wire and the employment of variable resistance to the electrical current. . . .
>
> On the question of time and result, there is such a cloud of witnesses . . . . that it seems impossible not to give credence to them. The evidence of some of them may have been shaken with regard to the time they had in mind; but that of the great majority was not shaken at all, but corroborated by circumstances which rendered the proof irrefragable. Many of them, it is true, were plain country people; but they heard the words through the instrument; and that is a matter about which they could not be mistaken. It did not require science nor learning to understand that. But the witnesses were not confined to this class. A number of them were people of position in society, official, professional, and literary,—all, however, like the inventor, regarding the matter more as one of curiosity than of public importance. . . .
>
> It is perfectly natural for the world to take the part of the man who has already achieved eminence. . . . . It is regarded as incredible that so great a discovery should have been made by the plain mechanic, and not by the eminent scientist and inventor. Yet the proof amounts to demonstration, from the testimony of Mr. Bell himself, and his assistant, Watson, that he never transmitted an intelligible word through an electrical instrument, nor produced any such instrument that would transmit an intelli-

[34] American Bell Telephone Co. v. People's Telephone Co., 22 Fed. 309, 336, 339 (D.C., N.Y. 1884).

[35] Supra note 44.

gible word, until after his patent had been issued; whilst, for years before, Drawbaugh had talked through his, so that words and sentences had again and again been distinctly heard.[56]

Thus, of seven Supreme Court Justices, four chose Bell and three refused to brand hundreds of apparently honest witnesses knaves or fools. For those who are still satisfied with the operation of the patent system, one may raise this question: *Would they feel the same way if one more of the Justices had been persuaded by the unshaken testimony of Drawbaugh's witnesses?*

Reis could sing through his telephone, and according to a "cloud of witnesses" Drawbaugh could talk through his; but Bell, who could neither sing nor talk through his telephone, was preferred. To the exclusion of all others working in the field, prestige and monopoly rights were given to Bell. This result, stoutly affirmed as the essence of justice by some persons, is viewed less dogmatically by disinterested persons. "Bell has been called the Columbus of the telephone advisedly," a recent writer has said, "for regardless of whether or not others crossed the Atlantic before him, Columbus gave the world a new continent."[57] Alluding to the exclusionary character of the patent system in the context of the telephone controversy, this writer continues:

> Such questions of priority frequently arise in scientific fields, as in other fields of human endeavor; and whenever one individual is mentioned as being responsible for some accomplishment, it is well to remember that usually there are others whose claims are almost as great and sometimes greater, yet who, by some twist of fate, have been deprived of the heroic position which one man can hold, though a battalion cannot."[58]

In an address entitled "The Inventors of the Telegraph and Telephone," delivered in 1891, Professor Thomas Gray, F.R.S.E., regretted that his account of the creation of the telephone and telegraph of necessity ignored "a host of important contributors." "To go into detail and do justice to everyone who has contributed," he said, "was an impossibility."[59] The patent system, more rigorous than even the Almighty, chooses only one. To cast a final doubt at its choice, Elisha Gray, who never relinquished his claim of having anticipated Bell in inventing the telephone, left this statement among the papers found after his death:

[56] The quotations are from the dissenting opinion. The Telephone Cases, 126 U.S. 1, 573–76 (1888).

[57] Harrison, Atoms in Action 46 (1939). [58] Ibid.

[59] Annual Report of the Smithsonian Institution 639, 657 (1892). See also Bawden, Man's Physical Universe 509 et seq. (1943).

> The history of the telephone will never be fully written. It is partly hidden away in twenty or thirty thousand words of testimony and partly lying on the hearts and consciences of a few whose lips are sealed—some in death and others by a golden clasp whose grip is even tighter.[60]

The last ten words of Gray's statement take this analysis back to a more factual base. The individuals we have been preoccupied with were actually like so many puppets in the litigation; as in a puppet show, the real business was going on backstage. The most important issue to be decided by the litigation was not which of the alleged inventors was to be granted priority, but whether one of the parties litigant was to be allowed to exclude all others in the production and distribution of telephones. The parties were corporations; the inventors were financially interested in the results of the litigation to only an extremely attenuated degree, if at all. By 1887 Bell's financial interest in the corporation which bore his name was probably minuscule; he had no interest in its policies.[61] As Casson points out, Bell "had done his part, and it now remained for men of different abilities to take up his telephone and adapt it to the uses and conditions of the business world."[62]

Men of different abilities also took charge of the contributions of Edison, Gray, and Dolbear. And the "adaptation" is not exactly what Casson meant to suggest. Western Union bought in the inventions of Edison, Gray, and Dolbear to wipe out the Bell Telephone Company. For the telephone was a threat to established telegraph interests, i.e., to Western Union, a near-monopoly built on patents with a history similar to that of the telephone patents. But then it came to pass that Western Union was faced with a more savage competitor in telegraphy; that Bell Telephone was willing to resist domination; and that Bell Telephone was willing to agree not to compete with Western Union in telegraphy. So an agreement between Bell Telephone and Western Union was formed. Some have argued that Western Union dropped its attack on the Bell Company simply because the latter's patents were unassailable.[63] This does not fit well with the promise by the Bell Company to pay Western Union 20 per cent

[60] Quoted in MacMeal, The Story of Independent Telephony 11 (1934).

[61] In the grand tradition of inventors, Bell seems to have been unmoved by the possibility of great personal wealth. He owned only ten shares of the 5000 issued in the first Bell Telephone Company. See Danielian, A.T.&T.: The Story of Industrial Conquest 9, note* (1939). When that company was reorganized, in 1879, and became the National Bell Telephone Company, Bell was not one of its executives; he was carried as "electrician." Ibid., at 11, note*.

[62] The History of the Telephone 46 (1910).

[63] Ibid., at 80–4. Rhodes, Beginnings of Telephony 52–3 (1929).

of the receipts from all telephone licenses, which Rhodes mentions;[64] nor does it fit well with the Bell Company's promise to keep out of the telegraph business,[65] which Rhodes does not mention. Danielian, the author of a fact-based analysis of A.T.&T., saw the settlement between the Bell Company and Western Union as a subplot of the play in which Western Union and American Union Telegraph Company were principals, struggling for a monopoly in electrical communications. When Western Union was certain that American Union could be kept from control of the telephone, and when it was certain, moreover, that the Bell Company would agree to keep out of the telegraph business, it gave up its claims in telephony in order to concentrate on its main struggle—the battle with American Union.[66] This throws some doubt on the pat explanation that Western Union was forced to give up its attack simply because of the unquestionable priority and validity of the Bell patents.

The extent to which inventors and inventions may be used merely as tactical means in the strategy of monopoly is further illustrated by another charge in the Government suit for annulment of the Bell patents. Among other things, the Government alleged that Dolbear anticipated one of the Bell inventions and assigned the alleged anticipation to Western Union.[67] When Western Union and the Bell Company settled their differences, the Government contended, "[Western Union] suppressed the fact as to the said invention of said Dolbear."[68] Moreover, "in order further to suppress the facts, [these companies] caused a collusive interference case to be begun in the United States Patent Office between said Bell and said Dolbear, wherein said Dolbear was not represented except in name, and wherein his assigns, the said Western Union Telegraph Company, the American Bell Telephone Company and said Bell were the real parties and were all in one interest."[69] Dolbear's attorney in this interference, the Government went on to charge, was "in fact one of the counsel for and in the pay of said American Bell Telephone Company."[70]

Though these charges were never adjudicated, it is scarcely possible that they were completely without foundation. Whether or not these charges were well founded, moreover, is much less important than the

[64] Rhodes summarizes the agreement between Bell Telephone Company and Western Union on pp. 52–3.

[65] Danielian, op. cit. supra, note 61, at 42.

[66] Ibid., at 41 et seq.

[67] U.S. v. Bell Telephone Co., 128 U.S. 315, 322 (1888).

[68] Ibid., at 323.

[69] Ibid.

[70] Ibid., at 323–24.

fact that the alleged conduct, if it had occurred, would have been a not uncommon result of the conditions created by the patent system.[71] More important at this point is the fact that inventors and inventions, presumably the primary concern of the patent system, are actually inconsequential in terms of the net effect of the system. So far as the patent system is concerned, technology is, largely, merely a field on which other forces play.

The point of the foregoing materials is that the patent system does not and cannot achieve even its immediate purpose. Attempting to give exclusive rewards to one inventor for one invention, it cannot possibly succeed in a just manner, except accidentally, because for all practical purposes there is no such thing as one inventor or one invention. And as the truth of this statement becomes more evident and the subject matter more important, the inadequacy and overwhelming social cost of the patent system grow more apparent.[72] At this point the system assumes the identity which is, from a social point of view, its most significant one. The most attractive thing the patent system has to offer is monopoly. Inventors and invention, the progress of science and useful arts, become incidental concerns, the promotion of which is lost in the pursuit of other objects—the assumption and maintenance of monopoly power.

Daniel Drawbaugh, simply as an inventor of the telephone, would probably never have been heard of by the public. But as a means of wresting from the Bell Company its monopoly position, he received plenty of publicity. To promote Drawbaugh simply as another inventor with important skills to contribute, the patent system was useless, for there can be only one inventor interested in a given invention—*if the patent system works perfectly*. But as a countercheck to the Bell interests, Daniel Drawbaugh was extremely valuable under the patent system—because the system cannot be depended upon to work perfectly and there is always the chance, therefore, that it will work badly in the given case. The people who got hold of Drawbaugh advertised that their possession of his invention would "certainly result in the driving out of all telephones

[71] Practices similar to those charged against Western Union and the Bell Company were proved in the glass container industry. See Part I of this article, 12 Univ. Chi. L. Rev. 80 (1944), especially at note 23.

[72] With a broader base of scientific knowledge and with more people trained in technology, simultaneous invention will occur more often than ever. On this trend, see Bichowsky, Industrial Research (1942). A physicist, chemist, inventor, and organizer and director of industrial research laboratories, Mr. Bichowsky says: "The real danger of loss of an invention to someone else . . . . is . . . . due to the fact that in an astonishingly large proportion of cases the same idea is conceived in different laboratories at the same time. Many important patents have to fight ten or even fifty interferences among inventors of the same idea, who have filed patents [applications] usually within a year of the earliest or senior party" (p. 48).

in the market, save the ones they hold."[73] The comment of a New York journal on the projected activities of this company was that "a long and interesting legal fight is anticipated."[74] And, of course, a long, interesting, and expensive legal fight did ensue.

The result of this fight reflects the result of all patent conflicts—suppression of competition, through either creation of restraints of trade by industrial combination, or, for especially fortunate combatants, the patent system's medal of honor: outright monopoly. Having slashed away all inventors but one, the patent system goes on to insure that only one—or, in effect only one—producer remains in the field.

II

Any one of several of the most important industries in the United States may be chosen to reveal a development significantly similar to that of A.T.&T.; it has been common for widespread inventive activity to be channelized by the patent system into long-run monopoly of production. In a book published twenty years ago, Mr. Floyd L. Vaughan analyzed the origin and character of several of our monopolies or near-monopolies.[75] He found that patent aggregations were a substantial element in their formation and the critical element in their maintenance. In steel and wire, shoe machinery, containers, mimeograph equipment, photographic supplies, oil production and processing, farm machinery, and incandescent lamps, Mr. Vaughan demonstrated monopolistic organization built upon patent protection.[76] Concluding this part of his study, he said:

> This chapter reveals the extent to which patents have assisted in the formation and continuation of some of the most objectionable monopolies. The author takes the position that competition in the industrial field promotes economic progress and protects the people against extortion. It is not the purpose of this study to discuss the evils of monopoly—high prices, the delimitation of economic opportunity, etc. They represent an economic cost, and a tremendous one, and therefore a liability in estimating the net worth of the patent system.[77]

To say that patents have *assisted* in the growth of monopolies is a true statement, but it does not go far enough. The patent system has not only assisted in the growth of monopolies. It has made them in many cases a practical necessity.

In the shoe machinery industry, for example, primary responsibility for

[73] See the newspaper account reprinted in The Telephone Cases, 126 U.S. 1, 549 (1888).

[74] Ibid., at 550.

[75] Vaughan, Economics of Our Patent System (1925).

[76] Ibid., at 74 et seq.

[77] Ibid., at 101.

monopoly goes to the patent system. Owing to the widespread character of inventive activity and the impossibility of clearly defining an invention for patent purposes, patent rights in the same or closely related aspects of shoe machinery were held by different parties. None of the patentees, consequently, could go into production without risking infringement suits by others. One of the witnesses for the United Shoe Machinery Company, in a suit brought against it, testified:

> We should hardly have dared to go ahead . . . . for fear of not succeeding in our patent litigation, or of conflicting with such improvements as Plant had patented. On the other hand, Plant . . . . would have hardly dared to go ahead with the possibility of these infringement suits. These infringement suits, or a good many of them, were then pending, and certainly he would have found very few customers, I think, for his machines.[78]

To get into production, the company chose to buy up all outstanding patents, or at least enough to insure impregnability and domination. When a suit was brought by the Government against the shoe machinery monopoly, the Supreme Court held in favor of the defendant. The monopoly was regarded as a natural and desirable means of avoiding a patent deadlock—"a situation familiar in patent law and contests," according to Mr. Justice McKenna.[79] "It will be seen, therefore," he continued, "that there was no other way out of the deadlock, if the inventions were to be used together, ... than by ownership in one hand of all the patents."[80]

We know that there are other ways out of a patent deadlock, but as of Mr. Justice McKenna's time ownership in one hand of all patents, regardless of their origin, was most impressive. The Aluminum Company of America is another monopoly product of the patent system. Remarkably similar to A.T.&T.'s, Alcoa's pedigree reveals simultaneous and intersecting inventions based again on the common cultural heritage of scientific research. Here the inventions rested on the basic researches of Sir Humphrey Davy, who is generally accredited with discovery of electrolysis as a method of reducing compounds. Until the 1880's, however, the process had not been successfully adapted to the reduction of pure alumina. Then, in 1886, two men independently achieved success and applied almost simultaneously for patents. The two men were Charles M. Hall of the United States and Paul L. T. Héroult of France. Since the patent system can countenance only one of several independent inventors, either Hall or Héroult had to lose—to ponder the proposition that the patent system rewards inventors. The Frenchman lost. With the patent awarded

[78] United States v. United Shoe Machinery Co., 247 U.S. 32, 51 (1918).

[79] Ibid. [80] Ibid.

to Hall, the Pittsburgh Reduction Company achieved a monopoly in the production of pure alumina.[81]

Again, however, a theretofore unheard of inventor was produced (this time successfully) to challenge the established monopoly. One Charles S. Bradley had applied in 1883 for a patent on an electrolytic process for reducing nonconducting metals in general, and alumina in particular, without the use of external heat. For nine years his application lay dormant in the Patent Office, when, for some little-known reason, it was activated and a patent issued. By that time, of course, Bradley had only a vicarious interest in the invention; he had assigned all his rights in metal-reduction processes to others. Litigation between alleged assignees determined that those rights had come to rest in the Cowles brothers. They promptly sued the Pittsburgh Company, and about ten years later, after a contrary decision in the district court,[82] a circuit court of appeals held the Bradley patent valid, prior to, and infringed by the Hall patent.[83] Some authorities, again confounding the confusion created by the patent system, have contended that the Bradley patent should never have been issued. Their charge is that Bradley had never reduced his process to practice, that, like Bell, he had simply entered a broad claim for every possible use of an unworked theory.[84] The fact remains, however, that under the decision of the circuit court of appeals the holders of the Bradley patent could keep anyone else from using electrolysis as a means of reducing nonconducting metals.

But this holding did not settle things. Though the Cowleses received a $3,000,000 judgment against the Pittsburgh Company, neither could produce pure alumina by the most efficient process then known, without permission from the other. This mutual frustration was a consequence of Hall's having patented improvements on what came to be called the Bradley process. Thus, the Cowleses could produce pure alumina, but they could not do it most efficiently without a license from the Pittsburgh Company; the latter could not produce at all without permission from the Cowleses. The settlement is a matter of history. As Mr. Wallace, author of a comprehensive study of the aluminum industry, succinctly stated, "The competition in invention issued in monopoly of production."[85] Mr.

[81] See generally, Wallace, Market Control in the Aluminum Industry 4–6, and Appendix B (1937).

[82] Electic Smelting & Aluminum Co. v. Pittsburgh Reduction Co., 111 Fed. 742 (D.C., N.Y., 1901).

[83] Electric Smelting & Aluminum Co. v. Pittsburgh Reduction Co., 125 Fed. 926 (C.C.A. 2d, 1903).

[84] See Wallace, op. cit. supra, note 81, at 536, n. 28. [85] Ibid., at 6.

Wallace has also given an admirable summary of the final disposition of the various rights: "Hall and his associates . . . . remained alone in the field. The Cowleses . . . . received a cash award. And Bradley . . . . received *recognition*."[86]

The Bradley patent, applied for in 1883, issued in 1892, and extending protection against all competition until 1909, gave the Pittsburgh Company a complete monopoly for at least three years longer than the Hall patents (issued 1886–89) would have given. Thus the patent system carried Pittsburgh Reduction, as Wallace points out, "past the business boom of 1906–1907 into the middle of the succeeding depression, and really gave [it] three extra years in which to become so well fortified against competition that none developed."[87] The telephone monopoly enjoyed comparable benefit from the "seventeen-year" exclusive right granted by the patent system.[88]

Time and the patent system have painted the face of monopoly in infinite variety. Most steadfast are the hues heretofore seen. In these cases, invention, vested interest, or stubbornness were not widespread enough to make ownership of all patents by one party impossible. To get into production with the security of a monopoly position, the various parties in interest found it possible or desirable to unite ownership in one company. But in some cases inventive activity is even more far flung than it was in the telephone, shoe machinery, or aluminum industries. In some cases the vested interest in invention is more deeply rooted, moreover, and interested parties are reluctant to part with a good thing. In such cases different forms are necessary, though the same effect can be achieved. To get into production with the benefits of monopoly, when various patent holders seek to remain in business or it is inconvenient to merge or consolidate, the parties may avail themselves of other devices which the patent system holds out as means of avoiding the frustrating difficulties it has created. Conflicting patentees may pool or cross-license their patents, retaining the essential characteristics of monopoly. So long as the pool is a consequence of "legitimate conflicts" created by the Patent Office, its

[86] Ibid., at 536–37. Italics added.

[87] Ibid.

[88] The Berliner transmitter patent, an indispensable element in the Bell Telephone monopoly, was applied for in 1877 but not issued until 1891, thus extending patent protection for over thirty years. The transmitter covered by the Berliner patent had been used by the Bell Company since 1878. See United States v. Bell Telephone Co., 167 U.S. 224 (1897). For other examples of prolonged patent protection, see Hamilton, Patents and Free Enterprise 135 et seq., T.N.E.C. Monograph No. 31 (1941).

members may coordinate their price policies and restrict entrance into the field. The pool is illegal under the Sherman Act—so far as established doctrine reveals—only if it was created with the primary purpose of dominating an industry, and if, moreover, that purpose is realized.[89]

The leading case on patent pools is usually said to be *Standard Oil Co. (Indiana) et al.* v. *United States*.[90] The common phenomena of widespread inventive activity and conflicting patent rights existed in the oil industry. An infringement suit had already been begun and several interferences had been declared. Allegedly to escape the confusion and insecurity created by the patent system, four large companies entered agreements. "Their sole object," they had asserted, "was to avoid litigation and losses incident to conflicting patents."[91] Under the agreements the cross-licensing firms pooled royalties received from licenses issued by them. To the charge of the Government that such pooling of royalties evinced an intention to obtain a monopoly and was therefore illegal under the Sherman Act, the Court replied:

> This contention is unsound. Such provisions for the division of royalties are not in themselves conclusive evidence of illegality. Where there are legitimately conflicting claims or threatened interferences, a settlement by agreement, rather than litigation, is not precluded by the [Sherman] Act. . . . . An interchange of patent rights and a division of royalties according to the value attributed by the parties to their respective patent claims is frequently necessary *if technical advancement is not to be blocked by threatened litigation*.[92]

Thus the patent system, created to stimulate the arts and sciences in a day when we were even more bereft of them than we are now, actually makes concentration of industrial power a practical necessity. To produce at all, these oil companies contended, they had to get together. Getting together meant control of between 60 and 90 per cent of the production of

[89] No alteration of the generalization given in the text above is required by the recently decided Hartford-Empire case,—U.S.—(1945) 65 S. Ct. 373 (1945), which held that the purpose of the arrangement there condemned was domination of the glass container industry. The inadequacy and confusion of this approach is pointed up by the fact that the original agreement, between Hartford-Fairmont and Corning-Empire, was provoked by apparently legitimate conflict in the Patent Office. See Part I of this article, 12 Univ. Chi. L. Rev 80, 82 (1944). The Supreme Court does not propose, in the Hartford case, any alteration of the traditional rights of the patentee; indeed, Mr. Justice Roberts was careful to reaffirm those rights. See Hartford-Empire Co. v. United States, 65 S. Ct. 373, 395 (1945). For these reasons it is safe to say that patent-law doctrine, including its uncertainty, is what it was prior to the Hartford case. The only difference now is that patentees who are held, for some reason or other, to have abused their patents, may expect to be compelled to license those patents at a reasonable royalty.

[90] 283 U.S. 163 (1931).

[91] Ibid., at 168. [92] Ibid., at 171. Italics added.

cracked gasoline.[93] But because their agreement was regarded as a necessary consequence of the frustrating conflicts created by the patent system, and because they were not proved to possess a complete monopoly of cracked gasoline production, the Supreme Court held their combination not illegal under the Sherman Act.

Case after case reveals how the patent system has departed from its express purpose, to serve, instead, the aims of monopoly. The liaison between Westinghouse and General Electric represents an interesting mutation—something between a patent pool and an outright monopoly. General Electric absorbed all its competitors except Westinghouse early in this century. Manufacturing an enormous preponderance of the incandescent bulbs used in the United States, these companies share their patents; prices are fixed in their licensing agreements. These agreements are legal under a famous holding of the Supreme Court, which establishes as one of the immutable prerogatives of the patentee that of fixing prices at which his licensee is to sell the patented product.[94] Since they either produce themselves or license the production of almost all the incandescent bulbs used in the United States, General Electric and Westinghouse are for all practical purposes a monopoly—another monopoly produced and protected by the patent system.[95]

The cases presented to this point sufficiently indicate how the inherent character of the patent system and its judicially created doctrines assist and even make necessary monopolistic organization of industry. Needless to say, few business organizations need extra incentive to seek the security of monopoly. Nevertheless, the patent system offers incentives even beyond those hitherto mentioned. Besides encouraging monopoly in the manner we have already seen, the patent system goads its concentrations of industrial power to further expansion by exposing them to what appears to be a most vicious danger.

Suppose a completely desirable substitute for the telephone were found by a person independent of A. T.& T; suppose further that that person could get impregnable patent protection for his new art; and suppose finally that that person refused to do business with A. T.& T., and refused to

[93] The parties to the agreement controlled 55 per cent of total cracking capacity. See ibid., at 175. Three of them, however, according to their own statistics, actually produced at least 66 per cent of the total cracked gasoline produced in 1924. See ibid., at 178, note 17. The Government contended that the primary defendants and their licensees produced 94 per cent of the total in 1924. Ibid., at 179, note 17.

[94] See United States v. General Electric Co., 272 U.S. 476 (1926).

[95] For more information on the General Electric Co. see Kottke, Electrical Technology and the Public Interest 82–3 passim (1944); Wood, Patents and Antitrust Law 168–72 (1942); Hamilton, Patents and Free Enterprise, T.N.E.C. Monograph No. 31 (1941).

license it in exploiting the new art—perfectly legitimate conduct under the patent system. Though A.T.&T. might be economically adaptable to efficient production of the new device, ruthless exploitation by the new patentee could push A.T.& T. out of business. The consequences would be staggering. The largest corporation the world has ever seen would be bankrupt. Hundreds of thousands of employees would be thrown out of work. Six hundred thousand stockholders would emerge with (*a*) what A.T.& T. brought in scrap auctions and (*b*) a strong resentment against their erstwhile management.

There can be little doubt that most corporate executives have been haunted by such possibilities. There can be no doubt that the conscientious managers of A.T.& T. have had some bad dreams. The reasonable thing to do, when faced with such dangers, is to make sure that no possibly competitive art is permitted to develop absolutely independently. This the managers of patent monopolies have done.

When radio appeared as a threat to the telephone monopoly, A.T.& T. made sure that it would have a telling part in the future of the new art by purchasing the extremely important rights in the DeForrest vacuum tube, an invention indispensable to the successful exploitation of radio.[96] Purchase of competing patents is one well-established means of maintaining the monopoly position. Another means to the same end is the creation of an industrial research laboratory. Dr. William D. Coolidge, director of General Electric's research laboratory, has described the general function of industrial research. "I think of research as insurance for industry," he said. When asked, "Insurance against what risk?" Dr. Coolidge replied: "Any industry is manufacturing certain things. Improvements may be made by others which would render those things unsalable." Pressed further with the suggestion, "In other words, insurance against a displacement from its position?" Dr. Coolidge responded: "Yes, that is what I mean."[97]

More detailed statement of a prevailing motive for research is to be seen in a memorandum written to a fellow A.T.& T. executive by Dr. Frank B. Jewett, president of the Bell Telephone Laboratories:

> While it is obvious that the basic inventions which control a large new field are not made very often, one can never tell where or when they will crop up. The tremendous

[96] See Danielian, op. cit. supra, note 61, at 102 et seq.

[97] This interrogation occurred at the T.N.E.C. hearings. See 3 Hearings before the T.N.E.C. 923 (1939). Industrial research, it should not be necessary to add, is, of course, not necessarily limited to defensive and inhibitory action. In the absence of a patent system, its whole thrust would be constructive and progressive. But in the presence of the patent system, the constructive aspects must contend, as we shall see, with desiderata totally irrelevant to technological improvement.

growth in both fundamental and industrial research in recent years has unquestionably increased the probability of such inventions, with their covering patents, arising. When such patents do turn up, possession of a strong and unmortgaged patent position on the part of an industry needing rights is frequently the most powerful and sometimes the only available weapon for securing those rights. Ability to stop the owner of a fundamental and controlling patent from realizing the full fruits of his patent by the ownership of necessary secondary patents may easily put one in position to trade where money alone might be of little value.[98]

The research aims of Hartford-Empire may be gathered from its "Memorandum on Policy," which reads in part:

> In taking out patents we have three main purposes—
>
> (a) To cover the actual machines which we are putting out, and prevent duplication of them. . . . .
>
> (b) To block the development of machines which might be constructed by others for the same purpose as our machines, using alternative means. . . . .
>
> (c) To secure patents on possible improvements of competing machines, so as to "fence in" those and prevent their reaching an improved stage. . . . .[99]

Commending the alert management of Alcoa, Federal District Judge Caffey pointed out that it had done many intelligent things. "Among the best of these," he said, "is the establishment of a research organization, equipment, facilities and staff. On the laboratories alone it has spent $2,300,000."[100]

As defensive measures, mass purchase and production of patents have served the monopolies in excellent fashion. Its venture into radio produced a situation highly satisfactory to A.T.& T. "As I look back on it," Dr. Jewett reminisced, "it seems to me that this enlarged and enhanced position [in radio research] played no small part in enabling us to reach our present satisfactory understanding with the General Electric Company and the Radio Corporation of America, and that if we never derive any other benefit from our work than that which follows the safeguarding of our wire interests we can look upon the time and money as having been returned to us many times over."[101]

[98] Memorandum for Mr. C. P. Cooper, A.T.&T. vice-president, June 30, 1932. Printed as Ex. 143 in Part 6, Hearings on S. 702 at 935, 938 (1944), 78th Cong., 1st Sess., 1943. On the relationship of industrial research to the business of A.T.&T. generally, see Danielian, op. cit. supra, note 61, at 92 et seq. From his comprehensive study of A.T.&T. (based on F.C.C. hearings, authorized by Congress in 1935, as well as on publications sponsored by the company), Mr. Danielian concludes: "Upon detailed examination of motives and techniques, research, inventions, and patents appear less as sanctified brands of public service and more as weapons of industrial warfare aiming at monopoly." Ibid., third page of Introduction (unpaginated).

[99] Ex. 125, 2 T.N.E.C. 771, 776 (1939).

[100] United States v. Aluminum Company of America, 44 F. Supp. 97, 309 (N.Y., 1941).

[101] Quoted in Danielian, op. cit. supra, note 61, at 112.

Though Hartford-Empire never licensed anyone to the use of its Peiler air-feeder for the mechanical production of glass containers, the expense of acquiring the Peiler patent was not, from Hartford-Empire's point of view, a complete waste. Hartford got no royalties from the patent; but, possessing it and the financial power to bring infringement suits against more humble enterprisers, Hartford was in a position to keep other firms from using any device which might be covered by the patent. Thus its dominance over the glass container industry was strengthened.[102]

Similarly, Alcoa derived no direct returns from its researches into the fabrication of magnesium, a light metal which is perhaps aluminum's strongest competitor. But because it held some patents, it was able to do business with the other holders of magnesium fabrication patents—Dow Chemical Company and I.G. Farbenindustrie. One consequence of the agreement between Alcoa, I.G., and Dow was that the last named became the only American producer, and its production of magnesium was limited by the terms of the agreement.[103] Another consequence was that the value of magnesium was not clearly perceived in America until the British shot down some German planes and found that wide use of magnesium accounted for the lightness and efficiency of their motors.[104] Practically unheard of before the war, magnesium is a highly advertised commodity now; we are promised a new magnesium world—everything from featherweight flivvers to portable perambulators—by producers whom the war has freed of patent controls to produce magnesium by the ton instead of by the pound.

It may be said now that the three "supposes" advanced above and the danger to established firms there implied, were actually pretty far fetched. The patent system is in no sense an enemy to the established firm seeking to maintain its position or to enlarge its scope. When the nature of invention, the character of the patent system, and the facts of industrial life are considered, the threat to established firms appears puny. The patent system then reassumes its identity as one of the best friends monopoly has ever had, and the "threat" it poses may properly be likened to a parental device for strengthening offspring: The danger is not great enough to harm and it is just great enough to stimulate activity resulting in more strength in the monopoly.

The monopoly enters a technological dispute with important ad-

[102] See 2 T.N.E.C. 389–91 (1939).

[103] On this, see Senate Hearings on S. 2303 at 957 et seq., 77th Cong., 2d Sess. (1942).

[104] See, Magnesium by the Ton, 29 Fortune 157 (March, 1944).

vantages. Alone in the field for some years, it has achieved respectable financial strength, coherent management, familiarity with its technology, and, perhaps most important, a keen knowledge of the ways of the patent system. The established firm knows that there is no such thing as a complete art covered by one patented invention. It knows too that an unassailable patent has never been issued. With a research laboratory prepared to produce a patentable invention practically at will, and with resources to acquire important patents already issued, that firm is lethargic indeed which allows a competing art a very great start. Once the firm acquires a patent related to the new art, all danger practically vanishes. All the fundamental weaknesses of the patent system then converge, paradoxically, to result in enormous strength and added advantages for the established firm.

The single and basic difficulty of defining an invention for patent purposes shatters into almost an infinity of difficulties when one considers that a single patent never covers a complete art. A radio set, for example, comprehends a number of patents or patentable inventions, some "basic," some "alternative," some "improvements." In advance of litigation no one can tell just where the boundary lines are. Patent litigation means the infringement suit, an unfortunate but necessary excrescence of the patent system,[105] perhaps the most expensive of all legal actions and the most unsatisfactory in result because of the basic difficulty of defining an invention. Expense and unpredictability, essential characteristics of the infringement suit, are properties which make it useless to the small firm or independent inventor; it is too rich for their blood. For the same reasons, however, the infringement suit is, as a recent *Fortune* article has explained, an efficient weapon for the powerful firm bent on domination:

[105] The basic difficulty of defining an invention or an inventor for patent purposes makes a second (or third, or fourth) guess by the courts a necessity. Kottke has explained the situation: "Most frequently," he says, "it is not the cost of obtaining a patent but the expense of litigating it which plays into the hands of those with ample resources. Yet it would be less than fair for the courts not to reopen the case. In the Patent Office the scales are heavily weighted in favor of the applicant. The examiner is not a specialist in the sense in which the applicant is a specialist, and he is allotted only a few hours to test an application which the latter may have taken months to prepare. The applicant has several appeals, the public none. Members of the trade are not informed—their only protection lies in the examiner's brief search. If a patent may put them out of business or divert a good share of their profits it would be unjust to deny them an opportunity to challenge the contention of the patentee that he first conceived the technique upon which others may have based their business." Electrical Technology and the Public Interest 39 (1944). The only important thing Kottke has left out is the explanation that this situation is, for all practical purposes, irremediable. An examiner can never be a specialist in the sense that the patent applicant is. If the infringement jurisdiction is taken from the courts, as some persons have suggested, it must be put somewhere. If it is put in the Patent Office, the expense of protecting one's patent would simply be metamorphosed into the expense of obtaining a patent.

> The most versatile of all devices . . . . is the infringement suit, one of the most expensive forms of litigation. The infringement suit can be used not only as a simple legal action to stop someone from stealing your invention, but also as a controling device with a range of action all the way from the veiled threat to the punitive war. A competing product, process, or machine is challenged, with or without a clear basis of infringement. If both patents and the patent-owing corporations seem to be of equal weight, the dispute is likely to be settled out of court with a cross-licensing agreement between the two. If the challenged company is fairly small, but its patent sound, it is likely to be forced, in lieu of incurring the expense of trial all the way up to the Supreme Court, to accept a license under the challenger's patent setting rigid price and production limits. This may continue in endless variations with endless controling results, all the way out to an open reign of terror not only against the alleged infringer but against all of his customers as contributory infringers. A big corporation, working from a base containing as many as 10,000 patents, can usually, if it wishes, find a basis on which to pursue almost any competitor. *More time, money, and energy have sometimes gone into this kind of warfare than ever went into the original technological development.*[106]

A.T.& T. discovered the value of the infringement suit early in its career, as appears from the annual report of its patent attorney for 1892. "It appears to me," he wrote, "that the policy of bringing suit for infringement on apparatus patents is an excellent one because it keeps the concerns which attempt opposition in a nervous and excited condition since they never know where the next attack may be made, and since it keeps them all the time changing their machines and causes them ultimately, in order that they may not be sued, to adopt inefficient forms of apparatus."[107]

A mere threat of infringement suit by Hartford-Empire was sufficient to eliminate a small Texas firm whose president said, in explaining the "voluntary" liquidation: "I realized that we couldn't pay $100 or $150 a day to stay in the federal court."[108] Even Hazel-Atlas, a fairly strong firm in the glass container industry, preferred entering the cartel to pouring more money into the seemingly bottomless pit of infringement litigation.[109]

When Dow Chemical Company spurned Alcoa's invitation to enter upon a career of restricted production, the infringement suit was hauled out as a means of bringing Dow into line, even though the Alcoa people had "no definite proof of infringing acts." In 1932 W. D. Keith of Alcoa

[106] War and Peace and the Patent System, 26 Fortune 105, 132 (Aug., 1942). Italics added.

[107] Quoted in Danielian, op. cit. supra, note 61, at 98.

[108] Testimony of S. A. Coleman, president of Knape-Coleman Glass Co., 2 T.N.E.C. 613 (1939).

[109] See Part I of this article, at 86.

wrote to Walter H. Duisberg of Alcoa's subsidiary, Magnesium Development Corporation:

> In my mind, the situation is not very complicated. Dow is either going to play with us or is not going to play with us. If they do not play with us, we have two courses before us. One is to enter into an oral argument over the entire industry with Dow. The result of this argument would simply be that a great deal of time, paper, and energy would be wasted to no particular effect. The other course is to sue Dow with two objects in view, the first object being to bring Dow to terms, the second object being to actually prosecute the suit to its logical end.[110]

Unable in the nature of things to perform its stated function of encouraging and rewarding inventors, the patent system seems to have undergone a metastasis. Its major utility lying in the coercive power it embodies, the patent system has become a key factor in the progress of industrial regimentation.

III

Out of the chaos created by the patent system, dominant firms wielding the infringement suit erect a kind of order—"order" imposed by brute force articulated on the legal content of the patent grant. In aiding the establishment and maintenance of this "order," the full extent of the departure of the patent system from its ostensible purpose is evident. Even without continuing patent protection, large aggregations of industrial power tend naturally to inhibit technological change.[111] *With* patent protection and the tools for domination provided by the patent system, the naturally inhibitory character of large-scale organization is heightened, and general inhibition or confusion of inventive processes results. The essence of the patent is the right to exclude; subordinate essences are the rights to fix prices and to restrict production, quantity-wise or geographically. Bolstered by these essential rights, individual patentees are in a position to frustrate the development of a new art, and combining patentees may cartelize substantial portions of both national and international industries, until the inhibitory character of large-scale organization may exist even in industries where there is some relatively small-scale production.

The case of beryllium, a vaunted light metal, recapitulates the phylogeny of the patent system—from basic confusion to cartelization. Andrew J. Gahagan, president of the Beryllium Corporation of America, had at one time thought his firm the pioneer in its field. Upon discovering,

[110] Ex. 19, Senate Hearings on S. 2303 at 1057, 1059, 77th Cong., 2d Sess. (1942).

[111] For an account of the obstacles to the introduction of new procedures in established businesses, see Bichowsky, Industrial Research ch. v (1942).

however, that beryllium fabrication had been worked out rather thoroughly and patented by the German firm, Siemens & Halske, Mr. Gahagan found himself in an uncomfortable position. "I wanted a license under [the Siemens] patent," he explained, "and [to] license them abroad under any of our patents abroad, or at least exchange information and co-operate closely. . . . . [But] they apparently had no great interest in the beryllium business[112] . . . . so after about three years I concluded that I wasn't getting anywhere. . . . . "[113] This left Mr. Gahagan in an unsatisfied state. "I had various conferences with the representatives of Siemens & Halske," he went on, "and I couldn't find out whether Metal and Thermit owned the patents or whether they didn't own them, or whether Siemens were going into the beryllium business in the United States or whether they were not going into the business."[114] Mr. Gahagan then revealed the serious danger to his business that this situation contained:

> . . . . by this time we had spent considerable money and a few years' work; if we continued the development we might find after five or ten years a lot of overhanging patents, owned by Siemens, which would be held against us and we would be told some day, "Well, you can't operate any more," or "you can't make beryllium-copper and heat treat it . . . . " and so forth, and the customers we had, or hoped to have in the future, might also be embarrassed.[115]

Beryllium Corporation had two choices: either to go out of business, thus avoiding the risk of infringement suits by a corporation immeasurably its superior in resources, or to do business with that firm on suitable terms. Beryllium Corporation and Siemens made a deal. Their agreement split the world between them, each party granting the other an exclusive license in its respective territory. Among other things each party agreed to refrain "from assisting third parties in producing beryllium except subject to the provisions of [the] agreement." Elaborate arrangements for cross royalties based on "average prices" indicate that rough price-fixing was probably another object of the agreement.[116]

In the absence of patent (or other governmental) protection, a monopoly or cartel faces almost certain long-run disintegration because it cannot keep out new enterprise attracted by artifically high profits. With patent protection, however, the cartel's only threat is the possibility of a successful antitrust suit (in which case we observe the somewhat puzzling spec-

[112] The German firm seems actually to have been quite interested in the possibilities of beryllium, and was apparently trying to give Mr. Gahagan the runaround. See 5 T.N.E.C. 2026–7, and Exs. 477–8, ibid., at 2276–8 (1939).

[113] Ibid., at 2025–6. [114] Ibid., at 2038. [115] Ibid.

[116] Ex. 481, ibid., at 2279–83. See especially secs. 4, 8–14 of the agreement.

tacle of governmental sanction followed by destruction), or a war with strong and belligerent outsiders (in which case a new, larger, and more powerful cartel usually results). Thus, over the years, the patent system has been the best protector as well as builder of monopolies and cartels, and the varied consequences of its protection have one thing in common: they are all undesirable in a society seriously concerned with approximating and maintaining traditional ideals of free enterprise and free competition.

Perusal of government publications, Department of Justice releases and complaints, recent books, and newspaper accounts reveals that cartelization predicated on patents has developed to an almost incredible extent.[117] National and international businesses and businessmen have been tied up by elaborate licensing agreements, until the business of production and the business of technological advance have been subordinated to the business of maintaining existing arrangements and relative positions. Inventive activity has not ceased, but it has been harnessed to monopoly, to the task of dragging "organized" industry through the ruts it has dug. Production has been stabilized along feudal lines; the traditional independence of the small-scale enterpriser, if it ever actually existed, exists no longer in fields where technology is dominant enough to call into play the full operation of the patent system. For then the small firm exists only by sufferance. The large firm with its formidable patent structure and the weapon of the infringement suit is in a position to snuff out any upstart who cherishes notions of independence in price or production policies.

Dependent upon the dominant firm for their existence, and comfortable in the security it provides, subordinate firms have come to delegate to the leader in an industry the function of strengthening the patent cartel. The leader insures its dominance, in turn, by inhibiting technological activity on the part of its subordinates. Thus a license from Hartford-Empire usually contained a clause requiring licensees to assign improvements on patented machines to Hartford.[118] And now, after the Government has obtained a decree requiring Hartford-Empire to liberalize the terms of its licenses, some licensees have refused to accept the more liberal terms. Discussing this problem, Mr. Justice Roberts said:

[117] Mr. Berge, Assistant Attorney-General in charge of the Antitrust Division, has said that "in every cartel arrangement which has come to the attention of the Antitrust Division of the Department of Justice technology has been a vital factor." Cartels: Challenge to a Free World 35 (1944). A summary of the outstanding cases may be found in part 6 Hearings on S. 702 at 713 et seq., 78th Cong., 1st Sess. (1943). See also Edwards, Economic and Political Aspects of International Cartels, Monograph No. 1, a study made for the Senate Subcommittee on War Mobilization, 78th Cong., 2d Sess. (1944).

[118] See Part I of this article, at 90, note 46.

"Hartford can be enjoined from enforcing the restrictions [in its licenses] if that is found necessary."[119] Having adjusted themselves to the paternalism of the dominant firm, these rugged individualists either cannot make their own way any longer, or they fear the type of reprisal which no court decree can prevent after the patent system has placed tremendous strength in one firm, or they are making another stab at maintaining the cartel, whose comfort the patent system taught them to cherish.

Relatively small businesses in electrical technology are exposed to similar conditions. Firms licensed under General Electric's incandescent-lamp patents must promise to license G.E. without further consideration under all related patents which they own or are privileged to sublicense; though the licenses *from* G.E. may be for short terms, the licenses *to* G.E. are for the life of the patent concerned.[120] Obliged to license the strongest firm in the industry, when that firm is under no similar obligation, the small company's incentive to invent is probably inhibited, and if the incentive to invent is not completely inhibited, the incentive to get patent protection is. For patent protection is an expensive business, and if a patent once obtained must be made available to a strong firm, which has no reciprocal obligation, the patent system offers no attraction at all. Speaking of the operation of the patent system generally, the author of a recent study of the electrical products industry pointed out that "the cost and uncertainty of patent litigation greatly impair the value of patents as an incentive, and occasionally they are a deterrent rather than a stimulus to improvement."[121] Small firms working in electrical technology, the same author said, "are persuaded, usually after unsatisfactory experiences with patent litigation, that they would be unable to protect whatever rights they might obtain."[122] As a consequence, this writer continues, "some small concerns no longer apply for patents."[123]

Thus patent strength is concentrated in the dominant firms which then possess absolute power over what has become, through the agency of the patent system, a closed industry. The inevitable consequence is that of all "closed shop" arrangements: members of the closed shop become so preoccupied with their own immediate security that dynamic productivity, which alone can insure general security, is gradually forgotten. "If a plausible case of overcapacity [in electrical technology] could be made out," Kottke predicts, "the industry would countenance denial of licenses

[119] Hartford-Empire Co. v. United States,—U.S.—(1945), 65 S. Ct. 373, 391, n. 22 (1945).
[120] Kottke, op. cit. supra, note 105, at 57.
[121] Ibid., at 130.
[122] Ibid., at 41.
[123] Ibid., at 130.

to newcomers, and price maintenance usually would be welcomed."[124] The rigid hegemony, structurally and psychologically dependent on patent protection, therefore creates conditions wherein a recession of business activity is subject to immediate and far-reaching aggravation. Speedy retrenchment and sticky prices are bound to come when they can be accomplished, in accordance with the already coordinated desires of existing producers, merely by making legally enforceable adjustments in patent licenses. The sins of the patent system are manifold.

But the evils created by the patent system do not end with the inhibition of invention and the creation of depression-aggravating cartelization. The basic futility of attempting to define "an invention" for patent purposes manifests itself again in monstrous confusion when several powerful firms have intersecting operations. In the field of radio, some of the strongest corporations in the world found themselves, not entirely by accident of course, in an impenetrable patent tangle.[125] Dovetailing and conflicting patents were held by A.T.& T., General Electric, Westinghouse, United Fruit Company, and others. No firm could produce a good radio, not because it did not know how, but because the patent system would have subjected it to the devastating expense of patent litigation. The respective corporations-in-interest were not greatly harmed by the frustration resulting from the basic inadequacy of the patent system; they were successfully engaged in monopolistic activities in other fields. Only the new art suffered real harm; its exploitation was set back several years at least. Indeed, had not the United States Government interceded to promote a reconciliation for war purposes, the mutual frustration might have continued much longer than it did.[126] The preamble to the pooling agreement indicates the character of the conflict:

> . . . . each party is in possession of information, patents and inventions applicable to, and has research organizations engaged in investigations bearing upon, not only its own business but also the business of the other party; and
>
> . . . . various patents or applications for patents of the parties are involved in interference with each other in the United States Patent Office;
>
> . . . . the restrictions upon each party imposed by the patent rights of the other and the uncertainties arising out of interferences have tended to, and if permitted to continue, will hamper and delay progress in the development and production of wire and wireless telephone and telegraph apparatus and systems; and
>
> . . . . the effective and prompt development of the arts in question can be secured

[124] Ibid., at 128–9.

[125] See Danielian, op. cit. supra, note 61, at 107–13; Wood, Patents and Antitrust Law 128–37 (1942).

[126] See Danielian at 109, et seq. The Government's intercession actually produced only a temporary compromise.

only by the free and frank cooperation and exchange of information between the parties, which can not well take place if improvements and knowledge resulting from one party's cooperation with the other party may without its consent be made available in its field to the use of others. . . . .[127]

The radio trouble was later mirrored in television, where some of the same parties were again at odds. Philo T. Farnsworth, inventor of one of the basic television processes, testified before the T.N.E.C. that television "has grown up so interwoven that part of the patents belong to RCA, part belong to us, part belong to Bell Telephone. . . . . Several of the fundamental patents are ours and I think several of the fundamental patents are RCA's also. . . . . It is not possible to build a television receiver without working under our patent; it is not possible to build a television receiver, in my opinion, without working under RCA license."[128] If the new art is to be developed at all, under such circumstances, the parties in interest must combine their patents. Such combination calls for elaborate agreements, designed to safeguard the interests of the established firms concerned. The tendency in such agreements is to fix the development of the art in accordance with the desires of the dominant bargaining parties. Lines of force are laid with the primary emphasis, not on the development of the new art, but on the perpetuation of established strength.[129]

In a world where change cannot be suppressed, even by the patent system and the elaborate agreements it produces, those agreements do not necessarily lead to smooth and rapid development of the art they cover; and, in the case of an art related to but not covered expressly by the subject matter of the agreement, they only heighten the basic confusion and cumulate the obstructions to technological development. Concrete examples of the obstructions which elaborate agreements cannot eliminate are presented by the careers of sound-movie equipment and synthetic rubber.

As a consequence of past pooling agreements, A.T.& T. and R.C.A. found themselves jointly possessed of the basic patents on sound-movie apparatus.[130] Each was in a position, therefore, to develop the field. Since their former agreements had not included the situation presented by the new art, however, obstructions similar to those characterizing the radio conflict arose, and development of the new art was once again frustrated

[127] Quoted, ibid., at 110.

[128] 3 T.N.E.C. 1004 (1939).

[129] See the Jewett memorandum cited supra, note 98.

[130] For an extended treatment of the facts cited in this and the following paragraph, see Danielian, op. cit. supra, note 61, at 138–72.

while the dominant firms jockeyed for position. A.T.& T. tried every conceivable device to keep R.C.A. out of the sound-movie field, even arguing that its attempts to keep movie producers from using R.C.A. equipment were motivated by its well-known desire to maintain high standards of performance. Since R.C.A's equipment was based on the patents used by A.T.& T., however, and since objective tests indicated that both types of equipment were equally good, another motivation must have accounted for A.T.& T.'s conduct. This motive, as appears from a memorandum written by an A.T.& T. official, was no more or less than the constant motivation to greater monopoly power:

> In the talking motion picture field, they [R.C.A.] are competing very actively with us at present, as you know, to develop an affiliation with the large motion picture producers and competition between us will doubtless ultimately result in a situation highly favorable to the motion picture interests and opposed to our own. This is an extensive and highly profitable field and it is quite worth our while to go a long way toward making it practically an exclusive field. I believe that we could justify, from a commercial standpoint, paying a large price for the liquidation of the Radio Corporation for this purpose alone.[131]

Once again the patent system provided the weapons for the battle. All the tricks with which the patent system endows its monopoly offspring—tying clauses, subtle hints of contributory-infringement suits, "double royalty" clauses, service-repair-and-replacement provisions, etc.—were used to discourage the purchase of R.C.A. equipment. But once again the only significant consequences of the dispute were delay in the exploitation of the new art and confusion in its development. R.C.A. finally shared the field with A.T.& T.

The foregoing situation was simple and innocuous in comparison with the one recently prevailing in the synthetic rubber field.[132] In this field, more than in any other, the fallacious assumptions of the patent system are laid bare, and the consequences of its simple-minded view of inventions and the inventive process show that it cannot be tolerated, if we are to have unrestricted production and rapid development of new processes. Here the patent system has worked industry up to a crescendo of confusion, and the consequences in terms of critical wartime shortages are even more painfully evident than are those in light metals. The scope and character of the confusion may be conveyed by naming the principal parties to one of the many major agreements which wartime production of synthetic rubber made necessary. Among the original parties to one of the

[131] Quoted, ibid., at 143.

[132] See generally, Senate Hearings on S. 2303 at 2621 et seq., 77th Cong., 2d Sess. (1942).

agreements pertaining to the manufacture of butadiene were the Rubber Reserve Company, Universal Oil Products Company, Standard Oil Development Company and Jasco, Inc., Shell Development Company and the M. W. Kellogg Company, Humble Oil & Refining Company, Koppers Company and Koppers United Company, Shell Oil Company and Shell Chemical Company, Carbide and Carbon Chemicals Corporation, Phillips Petroleum Company and the Lummus Company, Celanese Corporation of America, Standard Oil Company of Louisiana, Hycar Chemical Company and the B. F. Goodrich Company, the Dow Chemical Company, and the United Gas Improvement Company. This agreement covered only that part of the synthetic rubber field concerned with the manufacture of butadiene from butane, butylene, acetaldehyde, ethyl alcohol, propylene and formaldehyde, benzene, and hydrogen, or mixed gases containing butadiene in recoverable proportions.[133]

To get synthetic rubber into mass production, the national government has had to force a reconciliation between various patentees. Goodrich and Goodyear, for example, companies which had done substantial research in synthetic rubber, hesitated to do business with Standard Oil, because the licenses it offered provided for cross-licensing improvements. They are said to have feared the kind of dominance which Hartford-Empire had secured over the glass-container industry by similar licensing provisions fortified by tremendous resources and an already powerful patent position.[134] Thus, for fear of the monopoly power so easily constructed on patents, the rapid development of a new and necessary art was subordinated to other considerations; as ever, the business of production was frustrated by the tactics of monopoly fostered by the patent system.

Blithely operating on the principle that single inventions are self-sufficient and marketable, the patent system has thus made rapid development of a technologically complex field practically impossible. Its basic assumptions unfounded, the system necessarily creates confusion and the possibility of unending obstruction. *Fortune Magazine* has shown in a vivid and accurate description what patents have done in a newly exploited art:

> Probably the most complex pattern of all is the technically fast-moving oil industry, where a Topsy patent system has grown out of the sheer give and pull of necessity,

[133] See The Government's Wartime Research and Development, 1940–44, Report No. 5 from the Subcommittee on War Mobilization to the Senate Committee on Military Affairs 249–50 (1945).

[134] See Hearings on S. 2303 at 2635, 77th Cong., 2d Sess. (1942).

> Hundreds of patents are issued annually on basic processes, parts of processes, competing products, equipment, techniques, catalysts, and endless improvements on each, with ownership inextricably mixed among all the major oil producers and development companies. To operate at all, the industry has spun a nightmare web of licenses, cross licenses, patent-holding companies, pools, immunities, and "hold harmless" devices—so tangled and organic a growth that the forbidding chart on page 104 is probably the first attempt ever made to diagram it. Clearing some new processes out of the tangle into wide-scale war production in high-octane gasoline, toluene, and butadiene has had both the industry and government in knots.[135]

It is often impossible to tell which patents are key patents in a complex and rapidly growing art; hence the holder of any patent, if he has weight and swings it properly, may block a whole line of development; and even if no conscious attempt at frustration is made, the mere presence of conflicting, legally enforceable rights makes for confusion and obstruction. In a developing technology there may be hundreds of important patents to be reckoned with, each representing a hazard to smooth development of the art. Facing such facts, one may well ask with Mr. Alfred E. Kahn, author of the article, "Fundamental Deficiencies of the American Patent System": "Can the sweep of modern technology withstand the restrictive force of a hundred patents covering a hundred minute individual efforts in that growing process we call a 'product'?"[136]

"The proof that it cannot," Mr. Kahn continues, "is that industry after industry had been checkmated by the patent law and has been forced to set aside the individual patent both as a basis for production and as a stimulus and reward for invention."[137] In an attempt to avoid its frustrating difficulties, various industries (e.g., aircraft, radio, automobile)[138] have essayed modifications of the patent system with respect to their own operations. These industries have eschewed, to some extent, the essential patent prerogative—the right to exclude—hoping thereby to minimize the obstructions which thoroughgoing pursuit of the patent right creates. Significant as it is for an evaluation of the patent system, such private and unilateral modification has its limitations. If compulsory licensing of pooled patents were a well-established doctrine in patent law, existing firms might be trusted with the power which charter membership

[135] War and Peace and the Patent System, 26 Fortune 134 (Aug., 1942).

[136] Kahn, Fundamental Deficiencies of the American Patent System, 30 Am. Econ. Rev. 475, 482 (1940).

[137] Ibid.

[138] On aircraft, see Wood, Patents and Antitrust Law 148–50 (1942). On automobiles, see ibid., at 145–8; Kottke, op. cit. supra, note 105, at 17. On radio, see Wood at 135–7; Kottke at 86, 92–3.

in a pool gives them.[139] This condition does not exist, however, and the open pool is consequently subject to the same kind of objection that the outright cartel evokes. Essentially pre-empting the function of the Patent Office, a pool controls the destiny of its constituents and the art it governs; representing the combined strength of the industry, it is subject to the suspicion which all extragovernmental concentrations of power should excite.

These considerations aside, there are still other things which militate against choice of the pool as a satisfactory method of neutralizing the evils of the patent system. Members of a pool must still cope with the restrictive power latent in the present patent system. Safe from disputes with fellow-members, the member of a pool still has no guarantee against disputes with nonmembers. There is no way to avoid such conflicts and their undesirable consequences as long as the patent system exists, for the patent system forces itself upon the members of all industries in which there is technological change. No producer has a choice between taking or not taking out patents; patents must be acquired, if only for defensive purposes.

Even members of the automobile industry, which has gone furthest in renouncing the "protection" of the patent system, find themselves confronted with its difficulties. Thus, in a statement of policy prepared by patent counsel for General Motors Corporation, it is said:

> Neither the Corporation nor any of its subsidiaries ever purchased any patent unless it was felt necessary to do so to protect some article or device, or part thereof, they intended to manufacture. . . . . [Patents] were taken out, not because the Corporation intended to exploit them against its competitors, but to protect itself against persons who might think of the same thing and obtain a patent thereon and then sue the Corporation for infringement.[140]

Once in the game, however, all the harassing consequences follow. Though G. M. professed acquisition of patents only for defense, it was nevertheless involved in 446 interference proceedings between 1922 and 1937.[141] Possession of patents leads naturally, moreover, to attempts to enforce the rights they embody, and so General Motors has had its fling at the infringement suit. Unlike other large and well-established firms, however, G. M. has not found the infringement suit a desirable weapon; "the re-

[139] Fortune Magazine, perceiving the drift, has said: "In the long view . . . . war and reconstruction and the whole force of modern technology are moving inexorably toward some form of compulsory licensing, because pools cannot be regulated for the best social and technical ends by any milder reforms." War and Peace and the Patent System, 26 Fortune 138 (Aug., 1942).

[140] Ex. 104, 2 T.N.E.C. 691 (1939). [141] Ibid., at 692.

sults accomplished have not at all been commensurate with the expense."[142] Between 1924 and 1937, patent litigation cost G. M. about $3,000,000.[143]

We have seen that the patent system has not dealt, and probably cannot deal, adequately either with rewarding inventors or defining invention. We have seen also how the patent system's basically inadequate conception of invention assists and even makes necessary the growth of monopolistic organization, with its concomitant stifling of invention; how the patent system places a premium on enormous industrial strength in other ways, with the consequences that in an important technological field free enterprise is impossible and patents offer no incentive to any but the strongest firms. We have seen, finally, how the basic inadequacy of the patent system's conception of invention has created conditions which tend to clog the whole process of commercial exploitation of invention. It remains now to point out a further and perhaps more profoundly dangerous consequence of the operation of the patent system. Still in embryo, this vice of the system, "generated on the dung of other vices," is nevertheless worthy of observation.

Modern technology is based on fundamental discoveries in the natural sciences. Disinterested observation and experimentation are probably the most favorable conditions for scientific research; another important element in the growth of fruitful discovery is the free dissemination of the products of scientific research. These conditions find approximate realization in those universities which see as their business the finding and propagation of important facts about nature, man, and society.

Without providing an equally appropriate substitute, the patent system tends to weaken the position of the university as the perfect sponsor of scientific research. The patent system has built monopolies and encouraged them to create vast industrial laboratories; it has endowed them with the means of expanded research programs by putting them above the reach of competition. To the extent that it is responsible for the extravagant growth of the industrial research laboratory, the patent system draws men from universities, where they are paid to do disinterested research and to publish their results, and puts them in industrial laboratories, where their primary function is, or should be, to strengthen the industrial position of their employer.[144]

[142] Ibid. [143] Ex. 106, ibid., at 700.

[144] Dugald C. Jackson, professor of electric power production and distribution at Massachusetts Institute of Technology, wrote in 1932: "It is estimated that there are now in the neighborhood of thirty thousand research workers directly attached to technological prob-

The enormous research expenses of the modern industrial giant are paid for, of course, by the public, and thus the industrial laboratory gets social support which might otherwise go to the universities, whose relatively disinterested position makes them more appropriate agencies for the accumulation and dissemination of knowledge. The private firm is, and should be, concerned with strengthening its own position; if the public desires to support the pursuit of knowledge, therefore, its money is best spent by institutions whose function it is to engage in that pursuit. To the extent that industrial laboratories depart from policies of strengthening themselves in their research, they distort their own function; in a private-enterprise economy, the business of the private firm is to maximize its own profits.[145] There is no proper place for disinterested research by private firms in this system, and, their publicized protestations to the contrary notwithstanding, the chances are that none of our large industrial laboratories is engaged in the sanctified pursuit of truth for its own sake.[146]

An even greater danger to the advancement of knowledge is that the patent system may alter the university's conception of its own function.

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lems, and that only about five hundred investigators are supported in the less restricted research of university laboratories and research foundations. The ratio is disquieting. Multiplication of the five hundred is a need. The fertility of industry is likely to wane unless new knowledge may continue forthcoming at a rate which is in suitable keeping with the rate of industrial application; and unless new means for making the applications are constantly in review." See the essay by Professor Jackson, The University Laboratory as a Partner of Industry, printed as ch. ix in Ross (ed.), Profitable Practice in Industrial Research 177 (1932).

Industrial research has sometimes called for extremely large budgets. A.T.&T.'s research, for example, is said to have cost $250,000,000 between 1916 and 1935. In 1939 the Bell Telephone Laboratories alone had 3,669 employees, including 1,665 engineers, 273 physicists and metallurgists, 336 technically trained assistants, 328 draftsmen, and 60 patent solicitors. See Kottke, Electrical Technology and the Public Interest 52 (1944). Bennett, The American Patent System 184–6 (1943).

[145] Frank B. Jewett, president of the Bell Telphone Laboratories, has said: ". . . . there is a vital distinction between the university research laboratory and the one which can best serve industry. This distinction is involved in the *motive* behind each. It is a distinction so vital that any serious attempt to transfer the functions of one to the other, or even to make one serve the functions of both, is more than likely to prove disastrous to each. . . . .

". . . . the industrial research laboratory is part of a mercantile machine and its main objective must necessarily be the solution of purely utilitarian problems. In other words, it must of necessity concern itself essentially in cultivating for profit those regions discovered and mapped out by the academic experimenters in the fields of the fundamental sciences." In Ross (ed.), Profitable Practice in Industrial Research 7–8 (1932). See also the essay by L. A. Hawkins, Executive Engineer in General Electric's Research Laboratory, ibid., at 63, 68.

[146] "Research in the university and in [for example] the General Electric Company are two vastly different things; regardless of how much publicity men try to smooth this fact over." Bichowsky, Industrial Research 93 (1942). "The truth is that there is seldom justification for an *industrial* laboratory to work on problems for which an immediate commercial need is not seen. To work on soap films just for the fun of it or to increase the sum of human knowledge is not good business or good sense except under certain conditions." Ibid., at 111–2.

Tending to draw science from the universities, the patent system may "balance things" by inserting itself in the vacuum. The past susceptibility of the universities to revenue producing possibilities suggests that this fear is not visionary, and indeed the patent system has already entered universities. Those universities which pursue or encourage their members in the pursuit of patents, invite the same departure from disinterested research which is characteristic of the industrial laboratory. The university professor whose research is oriented in terms of patent protection inevitably loses the quality of disinterestedness. Research aimed at a patent necessarily departs from the "basic" level, for discovery of a "natural principle" is not patentable. Since a patent will not issue for an already published discovery, moreover, pursuit of a patent negates that other desirable feature of university research, the free dissemination of its findings.[147]

When and if universities pursue organized patent programs, there will be few institutions which pay men to do strictly disinterested research of a basic character. Under such circumstances there will probably be little basic research, and a first class irony will then exist. Established to promote the arts and sciences, the patent system, which has already frustrated the commercial exploitation of invention, will also have dried up its well-spring.[148]

[147] The conflict between the patent system and publication of the products of research is illustrated by the following excerpt from a memorandum from the files of the General Electric Company:

"We do not know exactly what system the Osram Company have in regard to looking over articles by their employees before publication. As you know, we have in this country a rigid routine which provides that all articles written by our employees before publication must be submitted to the Patent Department in order to see that no statements are made which may affect our patent situation. I presume that the Osram Company has a similar routine. In this particular instance, there might be a minor complication in that we have our license under the Schroeder U.S. patent from Krupp. Therefore, it might seem that Krupp should exercise some sort of censorship also. Primarily, however, it seems to me that the Osram Co. Patent Department should be responsible for looking over articles written by its employees." Lewin Exhibit No. 70, Senate Hearings on S. 2303 at 412, 77th Cong., 2d Sess. (1942).

[148] The need is for attitudes and actions which the patent system frustrates—greater stability, more sensible exploitation, the productivity associated with competition, and broader and deeper "pure" scientific research. These requirements are antithetical to the present era of gaudy gadgetry, proceeding from the distortions of all types of productive activity traceable to the patent system. On this question generally, see the essay written (in collaboration with L. A. Hawkins) by the renowned Director of Research of the General Electric Company, Mr. Willis R. Whitney:

"We in America are generally superficial. The lives of a few exceptionally able American inventors have led us to overprize engineering short cuts. We are patenting inventions at the rate of nearly 50,000 a year, but few Americans are advancing the sciences at all. . . . During the past century there appeared in European countries men who devoted their entire time to study in fields of new knowledge. Their lives were spent in their laboratories and all that they learned was freely published. They did not confine their teaching to talks about the works of

IV

"The business of government," Woodrow Wilson once said, "is to see that no other organization is as strong as itself; to see that no group of men, no matter what their private business is, may come into competition with the authority of society." This corollary of the axiom upon which representative government is traditionally rationalized, never encounters a straightforward challenge; but the facts of life reveal that it is often disregarded. We have resoundingly renounced the proposition in practically every important area of the economy, and instead of government by duly constituted authority, we have government by private groups—no matter what their business is.

If there is a common ideal underlying the various political and economic theories characteristic of America, it is, stated in the broadest sense, the ideal of individual self-realization, conditioned by free access to the resources of society. Since "the individual" means potentially *every individual*, achievement of the ideal requires organized action to the end that opportunity for self-realization remain open to all. Furthermore, since the existence of society is the condition precedent of self-realization ("success" as we know it is impossible outside society), the criterion of success in a nonexploitative system must be that of service to the society; briefly put, "the most of the best (at the cheapest price)." Three entities are therefore involved—the individual, society, and government. And the relationship among them may be sketched in this way: for the individual, opportunity; for the society, service; for the government, the job of maintaining the conditions wherein both the individual and society are thus served. With specific reference to a largely "private"-enterprise economy, the ideal requires a government vigilant to maintain freedom and equality of opportunity for the individual to reach economic success through efficient service of the public need and desire for material goods. A long step forward may be taken by adding that this is only the theory of free, competitive enterprise, stated in terms which reveal it as simply a device for serving, simultaneously, the individual and the common good.

The foregoing seems to be a fair statement of the theory of representa-

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others. . . . . If we search for a reason why so many scientific pioneers developed in Europe, rather than in America, we discover that they are the products of a system. Each was freed to evolve himself and follow his studies along the lines he chose, and he was given the assistance of students who were at the same time learning the value and rare power of careful thought and painstaking investigation. . . . . It is for such reasons that we want to see more chemists and physicists trained in our schools than are absorbed in our industries. We need them much more generally in scientific research laboratories, in the college or elsewhere, where the country's future interests are concerned." Profitable Practice in Industrial Research 247–8, 250 (1932).

tive government and free enterprise. Yet, it takes little insight to recognize that the lawmakers of the United States have not addressed themselves in a workmanlike manner to the achievement of the ideal. We have renounced it to accept government by private groups, and the renunciation has operated, with an almost divine malice, to the detriment of people in general. It has created vast concentrations of power, encrusted them with bulwarks which render attack most difficult, and made the socially desirable ideal of free competition within functional groups a dreadful idea to those groups and almost an excrescence in the eyes of society. By the delegation of governmental power to private enterprises, furthermore, that perverse conception has arisen which makes of competition a self-consuming process, until we find that free competition must inevitably mean "no-competition." This is nowhere more clearly expressed than in the dictum of Mr. Justice Holmes:

> It is plain from the slightest consideration of practical affairs, or the most superficial reading of industrial history, that free competition means combination, and that the organization of the world, now going on so fast, means an ever increasing might and scope of combination. It seems to me futile to set our faces against this tendency. Whether beneficial on the whole, as I think it, or detrimental, it is inevitable, unless the fundamental axioms of society and even the fundamental conditions of life, are to be changed.[149]

Pushed by the concerted action of interested groups, and unresisted by people impressed with the attitude of Mr. Justice Holmes, the tendency toward combination has enjoyed a veritable heyday. The simple phenomenon of strengthening one's own position, at the expense of both incipient competitors and society as a whole, has not only been tolerated, but lauded, outfitted with the raiment of an inexorable law of nature, and solemnly justified on economic grounds as socially desirable because of the efficiency of big business.[150]

In the important areas of the economy—in tariff regulation, corporation law, labor law, fiscal and monetary policy, patent law—there has been a great muddle;[151] the Government has failed to establish clear, just

[149] Vegelahn v. Guntner, 167 Mass. 92, 108 (1896).

[150] Among the assumptions underlying modern society, according to one rather influential book, are the following: "That large aggregations of capital are not inconsistent with the doctrine of free competition, but are, indeed, inevitable and socially desirable; that the individual workers must combine in order thereby to achieve the possibility of free competition with concentrated capital. The task of law, whether expressed by judicial decision or newly formulated by statute, is to accept or reject concretely the implications of these assumptions." Frankfurter and Greene, The Labor Injunction 204 (1930). Recent trends in labor law indicate that the implications of these assumptions have been accepted.

[151] The author believes that the distortion and the chaos visible in the patent system are only symptomatic of an illness manifest in all the cases mentioned in the text, and that the

rules, within which competitive forces could regulate the nation's industry for the general welfare.[132] This neglect of even the minimum responsibility placed upon government by the wisdom of laissez faire has bred chaos; and from chaos, enormous aggregates of financial, industrial, and political strength have emerged to dominate the scene and thus to compete with and often to vanquish the authority of society. Meanwhile, in industries where no giants have developed, moderate-sized firms, uninhibited by any thorough-going attempt by the Government to maintain competitive conditions, have erected petty cartels in order to escape the rigors of competition. Where it is impossible to keep out new investment,

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basic evil is not one that defies understanding. The basic evil is that different individuals have used government to further their own immediate ends, regardless of social consequences. Thus, the power of government has been encouraged and courted, at times, by the same people who have taken the general position that the role of government should be a "minor" one. This is most evident in the case of tariffs, the abolition of which is still opposed by the National Association of Manufacturers. In the labor field, likewise, since the nineteenth- and early twentieth-century antipathy has disappeared, and since there are now concentrations of labor power analogous to those of capital, at least one spokesman for the National Association of Manufacturers has courted the national power, seeking stringent regulation of labor activity. See the address by H. W. Prentis, Jr., Government's Place in Postwar Labor-Management Relations (1944), printed by the N.A.M.

The stand against governmental action in the field of corporations has been more unequivocal, and successful. The function of governing corporations has been delegated to the individual states; they in turn have delegated the function to the interested corporations; and thus the corporation has become a law unto itself. Corporate structures have consequently become so vast and intricate, and corporate finance so esoteric, that only a few people can comprehend their significance. These people are usually in control—control so far removed from either equitable ownership or productive activity, that monstrous bureaucracies are necessary for any kind of operation at all. This is the result of maintaining a healthy simplicity in government.

The same general phenomenon and its effects on the monetary system have been described by Economics Professor Henry C. Simons of the University of Chicago, who, casting about to describe the worst possible monetary system, in terms of the conditions necessary to free industry for its job of efficient production, found himself practically describing the status quo:

"Tolerable functioning of a free-enterprise system presupposes effective performance of a fundamental function of government, namely, regulation of the circulating medium (money). We should characterize as insane a governmental policy of alternately expanding rapidly and contracting precipitously the quantity of paper currency in circulation—as a malevolent dictator easily could do, first issuing currency to cover fiscal deficits, and then retiring currency from surplus revenues. Yet that is essentially the kind of monetary policy which actually obtains, by virtue of usurpation by private institutions (deposit banks) of the basic state function of providing the medium of circulation (and of private "cash" reserves). It is no exaggeration to say that the major proximate factor in the present crisis is commercial banking. This is not to say that private bankers are to blame for our plight; they have only played the game (and not so unfairly, on the whole) under the preposterous rules laid down by governments—rules which mean evasion or repudiation by governments of one of their crucial responsibilities." Simons, A Positive Program for Laissez Faire, Public Policy Pamphlet No. 15 at 14–15 (University of Chicago Press, 1934).

[132] The argument here, and through this section, leans heavily on Professor Simons' essay, A Positive Program for Laissez Faire (1934), which is the most compact of the clear-cut statements of traditional liberal principles and policies available. See also, the same author's Postwar Economic Policy: Some Traditional Liberal Proposals, 33 Am. Econ. Rev. 431 (1943).

which is always attracted by the high profits of the cartel members, capital equipment is squandered and both producers and consumers suffer.[153] Where patent, or other governmental, protection is available to keep out competitors, only consumers suffer.[154]

The disastrous results of the "do-nothing" policy in government are evident: whereas our ideals are oriented in terms of individualism and the common good, our practice has tended toward industrial collectivism, which is necessarily exploitative in its quest for monopoly profits and impregnability to disturbances elsewhere in the economy. We have made the Hobbesian analysis irrelevant by remaining in a state of nature. Life in this society remains too largely a struggle of naked force against naked force, for recognition and success to accompany performance in accordance with social or civilized standards of excellence. Victory is too often the prize, not of the most excellent, as defined by tenable civilized criteria, but of the most organized and, indeed, the most unscrupulous. The criterion of success has become, not productive efficiency in free and impersonal competition with equals or near equals, but efficiency in the tactics of combination. And while we delegate authority and responsibility to one group of men, we allow other groups, with neither authority nor responsibility, to carry on, in a practically lawless fashion, the most thoroughgoing and intimate regimentation of our lives.

Industrial collectivism tends to inhibit the enterprise and ingenuity which competition fosters, makes possible a regime of administered prices, and interferes with the equal allocation of resources which competition, guided as it is by consumer demand, tends naturally to achieve. Most disastrous of all, because of its inherently exploitative character, industrial collectivism makes detailed governmental regulation necessary in any society whose government is responsive to gross inequities. Now, there are enormous waste and imponderable problems involved in supervision by the government of the details of private enterprise. Experience with railroads and utilities indicates that such regulation is doomed to futility. Evidence introduced at a recent congressional hearing, for example, shows that attempts by the Interstate Commerce Commission to induce railroads to equip themselves with improved safety devices were futile. And in the same hearing testimony was submitted which indicates that rate regulation by the I.C.C. is a chimera:

[153] Competent economists have long stated that the restrictive practices of combinations in restraint of trade are "self-frustrating devices, which not only destroy productive power, but also destroy the social security which it is their avowed object to ensure." Fisher, A Liberal New Order, 10 Economica 176 (1943).

[154] Simons, op. cit. supra, note 152, at 8–9.

A rate bureau, or . . . . rate conference, is a *strictly private* organization of carriers for the purpose of considering and agreeing on rates to be charged. As of the beginning of 1942, there were approximately 60 rate bureaus . . . . in the railroad field, and 157 in the motor carrier field. These bureau or conference rates are filed with the Interstate Commerce Commission and with appropriate State commissions. The rates so filed are published by the bureaus and become effective automatically unless proceedings are instituted to suspend and investigate them.

Our studies show that less than 1 per cent of the rates so fixed and filed with the Interstate Commerce Commission are suspended and investigated. . . . .

As a mechanical matter I suppose it would be almost impossible to have separate hearings and findings by the Commission on all of those ['thousands and thousands of different rates']. . . . . It is not done and the rates are filed, and if they are properly filed they become lawful rates.[115]

Provoked by the waste and futility of detailed regulation, society's next step naturally becomes that of ownership and operation by the Government of the means of production. Thus the resentment of private enterprisers and "rugged collectivists" toward any action by the Government may lead to the elimination of all private enterprise. "A retreat from governmental intervention," says Mr. Leo Cherne, executive secretary of the Research Institute of America, "may prove to be a retreat into full governmental domination, into a completely predigested way of life. There is good reason to fear this outcome. Government has an unavoidable role to perform in a community; it is a reality which cannot be escaped. Denial of that reality by itself multiplies the problems which with each day's delay, compel more aggressive action by the government."

Such is the map of the future projected from the standpoint of industrial concentration and collectivism. On the other hand, decentralized, competitive enterprise promises a more attractive future in terms of human freedom and dignity. Permitted to operate within a coherent framework of laws and a stable, or at least intelligible, monetary system, competitive enterprise should equal the productivity of even the most regimented system. And at the same time, because of the self-regulatory character of competition, a competitive enterprise system would safeguard the distinction between political and economic functions, with the concomitant of maximum human freedom in society which that distinction has tended to approximate in the past and promises more fully in the future.

It is no wonder, then, that economic analysts seriously concerned with the preservation of democracy and the strengthening of the free enterprise system, place first on the list of their reforms the prevention or eradication of private monopoly and the deliberate enforcement of competi-

[115] Testimony of Wendell Berge, Part 12 Hearing on S. 702 at 1352–3, 78th Cong., 1st Sess. (1944). Italics added.

tion in the largest area of the economy. "Thus," says Professor Simons, and the emphasis is his, "*the great enemy of democracy is monopoly, in all its forms:* gigantic corporations, trade associations and other agencies for price control, trade unions—or, in general, organization and concentration of power within functional groups." And again: "The case for a liberal-conservative policy must stand or fall on the first proposal, abolition of private monopoly; for it is the *sine qua non* of any such policy. . . . . It implies that every industry should be either effectively competitive or socialized. . . . ."[156]

The major ideas in the foregoing analysis may be summarized as follows: (1) The "do-nothing" attitude toward the function of government is a fraud which either wastes the organized power of society or channelizes it into a socially undesirable course. (2) The basic evil in the economy is monopoly power, with its junior exponents, combinations in restraint of trade. (3) Instead of fostering concentration, governmental policy should be directed toward making competition effective wherever possible.

The relevance of this discussion to the subject of patent reform lies in the fact that the case for reform of the patent system is largely the case for rendering competition more effective. Patents are what may be called a matter of pan-industry concern; the effects of the patent system are felt in every area of the economy; it spreads lines across industries and down through industries, from giant firms to pygmies and even to small consumer outlets. Spreading as it does, furthermore, the patent system also serves as a communications line over which the most attractive opportunities for the imposition of industrial hegemony may by relayed. Because it shows the way to really effective and even "legal" combinations, the patent system is a well-nigh irresistible invitation to contracts in restraint of trade, to the satisfaction of the yearning for industrial "coherence," and to the elimination of such bad things as price wars and "unfair competition." Finally, and perhaps most important from a long-run point of view, the patent system operates to make possible and to encourage bigness in "single" concerns, to create one or a few giants in an industry, and thus to place physical, political, and psychological obstacles in the path of any program aimed at promoting competition. For once an industrial giant is created, with its elaborate organization, and its grip on the public mind, cemented by public relations departments rivaling those of the Army and Navy, the job of inducing competition in that industry be-

[156] Simons, op. cit. supra, note 152, at 4.

comes enormous. If we are seriously to pursue a program of making competition more effective, therefore, it is clear that something must be done with the patent system.

V

Perhaps the most convincing evidence of the patent system's general inadequacy is that everyone acquainted with it has complained about some aspect of its operation, and all sorts of proposals for reform have been submitted over the years.

Independent inventors, including some of the most noted in our history, have registered formal objection to the inequality of bargaining power encouraged by our do-nothing system which has been, in the long run, a "system" for promoting concentrations of power and inhibition of social utilization of technological improvements. As long ago as 1912, Thomas Alva Edison testified at a congressional hearing that "the long delays and enormous costs incident to the procedure of the courts have been seized upon by capitalists to enable them to acquire inventions for nominal sums."[137] A few years later, the Inventors Guild had this to say:

> It is a well known fact that modern trade combinations tend strongly toward constancy of processes and products, and by their very nature are opposed to new processes and new products originated by independent inventors, and hence tend to restrain competition in the development and sale of patents and patent rights; and consequently tend to discourage independent creative thought, to the great detriment of the nation.[138]

When it is remembered that the patent system is one of the most important means of creating the "modern trade combinations" of which the Inventors Guild complains, its statement assumes the character of a complaint against the patent system.

More recently, a contemporary inventor has stated in effect that the patent system has choked itself; that the process of acquiring a patent or of exploiting an invention has become simply too much for an individual inventor. "It is hardly to be wondered at," this inventor concluded, in a long letter to the *New York Times*, "that under such conditions an inventor is likely to think three or four times before going to the expense and trouble of applying for a patent here."[139]

[137] The Oldfield Hearings of 1912. Quoted in Vaughan, Economics of Our Patent System 72 (1925).

[138] Quoted in Vaughan, Suppression and Non-working of Patents, 9 Am. Econ. Rev. 693 (1919).

[139] Ivor B. Yassin, who had in 1937 invented a structure analogous to the presently publicized Bailey Bridge, was the writer. New York Times, p. 14, col. 6 (Nov. 17, 1944).

Despite such objections, however, most complainants contend that there is nothing radically wrong with the basic conception of a patent system; and procedural changes are usually all they propose. Before the T.N.E.C., for example, Mr. Charles B. Sawyer, president of the Brush Beryllium Co., pointed up what seems to be an extensive and irremediable defect of any patent system. He contended that too often patent applicants gain protection in areas so broad that fellow workers in the same or related fields are obliged to subordinate themselves unduly to the first patentee. The first patentee, he complained, often acquires a controlling power out of all proportion to the character of his contribution.[160] And yet, Mr. Sawyer saw no reason for any radical change in the patent system. The most desirable cure, to his mind, lay simply in increasing the staff of the Patent Office. It should be added here that Mr. Sawyer readily confessed that he had not thought much about the problems of patent agreements in restraint of trade, of monopoly, or of cartelization. Pressed on the matter of international agreements dividing territories, he said: "That is a subject on which I am sorry that I am not prepared to speak." But though his business was endangered by the cartel agreement between Siemens & Halske and the American Beryllium Company, Mr. Sawyer thought cartels "not necessarily bad."[161]

PROPOSALS OF THE NATIONAL PATENT PLANNING COMMISSION

Arising from a similar approval of the basic conception of the patent system are the reforms proposed by the National Patent Planning Commission, an organization composed of several-well known technologists and business executives, headed by Dr. Charles F. Kettering, vice-president of General Motors Corporation. The N.P.P.C., which stated in its first report that the patent system "has accomplished all that the framers of the Constitution intended," put forth only two proposals even faintly resembling reforms: proposals for a uniform *objective* test of patentability and a single court of patent appeals.[162]

The proposal for an "objective" test of patentability arises from the perpetual difficulty of deciding when an invention has been made and whether it merits patent protection. This difficulty is currently manifested in the dispute between the "flash of genius" criterion of invention and patentability, on the one hand, and the "measurable" or "objective" cri-

[160] 5 T.N.E.C. 2140.

[161] Ibid., at 2142.

[162] Report of the National Patent Planning Commission (1943). This report may be found in Appendix 20 of Barnett, Patent Property and the Anti-monopoly Laws (1943).

terion, on the other.[163] The first of these approaches would restrict the award of patents to cases in which the judge (or patent examiner) thought the contribution offered was the product of a creative leap of the imagination; the latter would allow the grant of a patent in those cases in which judge or examiner thought the applicant had created something new, something which represented a "measurable" advance over the former state of the art. Except for the fact that the dispute over the two criteria has caused a good deal of solemn argument, one might be inclined to dismiss it as absurd. For the crucial variable in deciding patentability is not the verbal test, but the attitude of the judge toward invention—whether he is "easy" toward applicants or enamored of gadgetry, or whether he is "tough" or aware of the restrictive possibilities of patents. Whether the "flash" test or the "objective" test is used actually would seem to make little difference; both are merely similar ways of saying the same vague thing, viz., that the judge or examiner has the duty of examining various devices with the object of deciding whether the applicant is to get a patent. Though the objective test will serve one purpose, which will be dealt with presently, it seems to offer little in the way of reform of the patent system.

The second proposal of the N.P.P.C. is that of a single court of patent appeals. Besides the fact that not even all the admirers of the patent system can agree to this proposal,[164] it seems sterile on other grounds. The ordinary judge does, of course, have to work pretty hard to understand the problems posed by the patent system. Other things remaining equal, time might be saved, therefore, if a specially trained body were given exclusive jurisdiction over awarding patents and determining their technological scope. But other things do not remain equal. The problems posed by patent litigation are not exclusively or even predominantly scientific, technical, or technological problems. In some suits, indeed, these problems may even be relatively unimportant. Issues of priority, anticipation, and rough psychology usually predominate; strictly legal problems such as validity and scope of assignments and weight and admissibility of evidence are common elements. This is largely true, also, of interference proceedings and of the court procedures when appeals are taken by patent applicants from unfavorable decisions of the Patent Office.

The basic problems in patent litigation on this level are whether a pat-

[163] See Richard, Standards of Invention in the Patent Office, 27 J.P.O.S. 24 (Jan., 1945).

[164] For a strongly stated argument, by an admirer of the patent system, against his proposal, see the article by the Honorable John J. Parker, Senior Circuit Judge of the Fourth Circuit, Recurrence to Fundamentals, 27 J.P.O.S. 12, 21–3 (Jan., 1945).

ent should be granted and who should get it. Understanding of the technological facts is not impossible, but only difficult, for common-law judges, and no more difficult than understanding of legal doctrine is for technologically trained men. The effective difference between special and ordinary courts blurs still more when one considers that not even technologically trained men can be familiar with all the technological problems raised in patent litigation. By definition, "new" things are involved in such cases. Merely to substitute specially trained men of one group for those of another, therefore, would probably not settle the patent problems created even on this level. At bottom a value judgment is involved. The question is whether the device offered is new and useful. Good judgment is the basic desideratum in such a case, and no one has argued that technologists have a monopoly on good judgment.

The proposal for a single court of patent appeals does promise, however, more consistency in decisions and perhaps more speed in the determination of disputes. As such, it would be desirable, if speed and consistency were ends in themselves. But it seems unprofitable to commend proposals which overlook, as those of the N.P.P.C. do, the abiding difficulties in any attempt to grant exclusive rights in inventions. The point has been emphasized here that the patent system attempts too much. Viewing invention in an essentially artificial light, the patent system has set itself impossible tasks, and it is from the inevitable frustration inherent in any attempt to do the impossible that the glaring evils of the patent system result. These evils the proposals of the N.P.P.C. make no attempt to minimize or combat.

The basic flaw in any patent system results from its attempt to establish a closed category in a dynamic, multidimensional continuum—to carve out an area of *thought* and give it to one individual. It is this fact about invention which, more clearly than any other, distinguishes the so-called property in patents from other, more perceptible and definable, property rights. Again, it is this fact which makes widespread conflict inevitable; for individuals must inevitably wander into the same area of thought. And when they do, the patent system commands them to fight, for the game is winner take all.

This basic deficiency of any patent system has long been recognized, as is to be seen by its treatment in the interesting address given before the Glasgow Chamber of Commerce, in the 1860's, by one J. Stirling. (The address is reprinted here in an appendix.[165]) Undiscriminating advocates

[165] The only other place that Mr. Stirling's address can be found, to my knowledge, is in the volume entitled, Recent Discussions on the Abolition of Patents for Inventions 116 (London: Longmans, Green, Reader, & Dyer, 1869).

of the patent system still bear down hard on the argument that a patent is like a man's house; they imply that to give up patent protection would border upon physical expropriation.[166] Some of Mr. Stirling's observations should be sufficient to silence those arguments:

> Patent-right cannot be defended on the ground of justice.
>
> The object of a Patent-Law is to establish a "property in ideas:" but this involves the double fallacy that thought can and should be appropriated. The end of all law is to ensure the universal freedom of human action. Hence the law of property secures to every man the product of his own labour. It gives to each an exclusive right to the material embodiment of his productive energy, to be possessed or alienated by him at will. But in so doing it leaves unrestricted the productive energy of every other man. The freedom of one (as represented by his property) is thus consistent with the freedom of all.
>
> But thought cannot be appropriated. In thought there is no material product to be made the object of a proprietary right. There is no "thing" to be possessed or alienated. The law can only, therefore, give the exclusive use of an idea to one person by injuriously limiting the intellectual activity of all others. A Patent-right, therefore, is less a "property in ideas" than a monopoly of thought.

The important consideration at this point is that it is impossible to define any invention without, as Mr. Stirling pointed out, slicing into the continuum of thought. If thought be regarded as an undefined area, it is clear that individuals must wander and have wandered into the same region, unaware that through the offices of the patent system it has been pre-empted. It is not possible to put up signposts in this continuum, warning off trespassers. And even if it were, it would seem undesirable to do so. Nevertheless, the patent system has made the attempt, and its only ascertainable product has been tremendous conflict, which only the strongest, not in productive or inventive excellence, but in financial and attendant resources, can survive. The end result is an economy strung with monopolies and cartels.

The things which the N.P.P.C. proposals will not or cannot do having been pointed out, it remains now to consider what those proposals will do. Both proposals would accomplish one thing at least: they would erase the influence on the patent system of the United States Court of Appeals for Washington, D.C. That court now shares jurisdiction with the Court of Customs and Patent Appeals over appeals taken by disappointed patent applicants from adverse decisions in the Patent Office; in such cases, that court has adopted a criterion of patentability which differs, as much as such criteria can, from the "objective" test proposed by the N.P.P.C.

In decisions which have called down the wrath of the patent bar, the

[166] Every conceivable argument in support of the patent system can be found in either the text or the appendices of Barnett, Patent Property and the Anti-monopoly Laws (1943).

Washington, D.C., Court of Appeals has attempted to bring the patent system into accord with the Constitutional terms upon which it is based.[167] The court has taken judicial notice of the facts of industrial life, and doing so has found that in the modern industrial laboratory a "complete invention" by a single inventor (a) seldom occurs, and (b) would indeed be inconsistent with the processes of research and development perfected in those laboratories. There can be little doubt that these findings are valid. Besides the evidence cited by the court,[168] the statements of an experienced industrial researcher are enlightening on the point. In a book addressed to industrial research managers, Mr. F. Russell Bichowsky instructs his readers on the relationship of industrial research to the patent system. "There is a delightful legal fiction," he says, "that conception of an idea is a single act to which a date can be put, and *proven*, but in reality, ideas sort of creep up on one. However, if a patent is to be obtained and protected, one must furnish the patent attorney with a written record, signed, witnessed by others and explained to others, stating that A on the date B invented C. It takes both humor and experience to appreciate the absurdities and trouble this simple sounding requirement can cause." Mr. Bichowsky then says: "Usually there really isn't an inventor. A conception of idea usually requires the copulation of at least two minds. Who in this case is the inventor?"[169]

The Washington court has also noted that patents offer little or no incentive to employees of industrial research laboratories, because a common custom of those laboratories is to require assignment of all patents obtained by their employees. And particular recognition of a single employee is avoided, moreover, because of the possible harm to the morale of his co-workers.[170] Again, statements made by Mr. Bichowsky are relevant:

> . . . . it is promotions and special awards which wreck laboratories.
>
> The best procedure [for rewarding technological contributions] . . . . involves paying to the laboratory, for distribution among the personnel, a lump sum as a bonus in proportion to the wealth created. This is distributed so that all in the laboratory, even secretaries and janitors profit—those most responsible profiting proportionately.[171]

[167] See, especially, the two Potts v. Coe cases, 140 F. 2d 471 (App. D.C., 1944), and 145 F. 2d 27 (App. D.C., 1944).

[168] See 145 F. 2d 27, 28, et seq.

[169] Bichowsky, Industrial Research 82–3 (1942). See also, Profitable Practice in Industrial Research 87–8 (1932).

[170] See 140 F. 2d 472, 475, et seq.; 145 F. 2d 27, 29, et seq.

[171] Bichowsky, Industrial Research 116–7 (1942). "Large bonuses for inventions are fatal errors, conducive to jealousy and immediately destructive to teamwork. Practically, in a

The patent system is based on a theory of individual rewards to individual inventors for individual inventions. Placing the facts about invention in the industrial laboratory against this theory, one cannot sensibly say that facts and theory coincide. As Mr. Bichowsky points out, fictions are necessary to give shape to the essential unreality of the situation. A realistic court might justifiably deny a patent, therefore, on any product of the industrial research laboratory. But the Washington court has not gone that far. It has simply placed with the patent applicant the burden of proving that there was an individual inventive advance over the level of the art then existing in the given laboratory.[172]

This approach certainly poses no insuperable obstacles to the mass aggregation of patents by industrial laboratories; it may, indeed, as Mr. Bichowsky's book indicates, merely add another detail in the work of the industrial laboratories; in addition, the Patent Office favors, and contends that it is bound by, the criterion of patentability established by the Court of Customs and Patent Appeals, and that criterion draws no distinction between applicants from an industrial laboratory and all others.[173] But the Washington court's approach to this and other patent problems is a hazard of sorts to mass production of patents, and as such it tends to minimize their restrictive power.

With the foregoing facts at hand, it is possible to form a fairly adequate judgment of the proposals of the N.P.P.C. Those proposals would not ameliorate the conditions which underlie the present agitation for reform of the patent system: they would not solve the basic difficulty involved in exclusive rewards for inventions; they would not insure the patents of financially weak inventors or businesses; they would not alter the character of the patent system as the builder and protector of monopolies. If anything, the N.P.P.C. proposals would, on the contrary, make it easier for large firms to acquire vast and complex aggregates of patents. This would be the net effect of abolishing the jurisdiction of the United States Court of Appeals of Washington, D.C.

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laboratory enjoying true cooperation in its staff, nearly every important development represents the effective contributions of many workers. Unfortunately our patent law requires that the patent application be filed in the name of an individual, or individuals. Yet it is the cooperative actuality rather than the patent technicality which the laboratory management should stress." L. A. Hawkins (Executive Engineer, Research Laboratory, General Electric Company), "Organization and Operating Principles," in Profitable Practice in Industrial Research 71 (1932).

[172] Potts v. Coe, 145 F. 2d 27, 28 (App. D.C., 1944).

[173] See Richard, op. cit. supra, note 163, at 28, 33–4.

H.R. 97—THE VOORHIS BILL

Though ignored by the N.P.P.C., the long-run tendencies of the patent system emphasized here have stimulated other proposals for reform. H.R. 97, introduced in January, 1945,[174] by Representative Voorhis of California, is the culmination of several bills aimed at modification of the rights of the patentee.

The Voorhis Bill, which seems to be an honest attempt to return the administration of the patent system to the federal government, subordinates patents to the public policy expressed in the antitrust laws. Except for provisions for readier review of scope and validity of patents (secs. 27, 31), the bill is concerned almost exclusively with what is *done* with patents, rather than with how they are issued. Provision is made for filing with the Antitrust Division a complete history of every patent; the division is made a necessary party to every patent conflict. Expressing the pragmatic attitude displayed by Thurman Arnold in the Senate patent hearings of 1942,[175] the bill makes possible a case-by-case development of permissible patent practice, and it insures the dominance of the antitrust approach by its most important section, section 29.

The ingenious character of section 29 of the Voorhis Bill, which provides for compulsory licensing in a qualified sense, may be best understood by considering some of the arguments revolving around the highly disputed issue of compulsory licensing. Recognizing the obstructive potentialities of patents, many analysts have proposed compulsory licensing as a means of preserving whatever there is of good in the patent system while eliminating the bad. In a day when Englishmen did not think that patents should be used to monopolize trade, for example, one writer argued against the then current demands for outright abolition of the patent system by proposing compulsory licensing. "In order to prevent any patent being, under any circumstances, used to secure a monopoly of trade," he said, "everyone should be at liberty to use a patent upon the payment of a reasonable royalty. . . . . This arrangement would decrease patent litigation; for the most powerful inducement to infringe patents would be removed, inasmuch as it would be cheaper to pay a reasonable royalty than to infringe."[176]

The common argument against compulsory licensing is that as a general prescription it might discourage all inventive effort. No one would

[174] H. R. 97, 79th Cong., 1st Sess. (1945) is proposed as an amendment to the Clayton Act.

[175] See Senate Hearings on S. 2303 at 3279 et seq., 77th Cong., 2d Sess. (1942).

[176] 9 L. J. 752, 754 (1874).

finance the development of an invention, this argument continues, when an outsider could come in after all the work is done, produce the given device, and sell it at a lower price than the patentee because developmental costs would not be included.[177] Speaking as it does of "discouraging invention," this argument seems naïve when one considers the judgment of social scientists who see invention as the inevitable product of the social process.[178] Again, the argument assumes that it is an expensive thing to produce a patentable invention but a trifling process for an imitator to reproduce it. Common opinion, on the contrary, is that the greatest trouble and expense lie in plant adjustment, training of personnel, marketing arrangements, etc. Even to say that abolition of the patent system would discourage invention or put original inventors at a disadvantage, is therefore rash. But to say that compulsory licensing would do these things comes close to being sheer sophistry, or nonsense. For, besides having a head start, the patentee would have the price advantage accruing from the receipt of royalties.

There is one situation, however, in which the common arguments against a general compulsory licensing scheme have some persuasiveness. Since we have allowed gigantic firms to spread their activities to many different fields of production, their financial strength and technological know-how make them potentially devastating competitors for a small firm seeking to exploit a new device or process. One might have thought that the proper thing to do, to meet this danger of pre-natal strangulation, would be to limit the size and simplify the activities of corporations—prime desiderata on many grounds.[179] But, in the absence of such thoroughgoing reform, complete patent protection, assuming there is such a thing, might be desirable in order to give new firms a start.[180]

It is in connection with the latter possibility that the ingenious practicality of section 29 of the Voorhis Bill appears. Section 29 establishes no blanket compulsory licensing requirement. Fitting the patent system into the competitive scheme expressed in the antitrust laws, section 29 pro-

[177] Mr. Barnett's book, Patent Property and the Anti-monopoly Laws (1943), contains all the arguments resisting change of the patent system.

[178] See Gilfillan, The Sociology of Invention (1935); Mumford, Technics and Civilisation (1934); Vaughan, Economics of Our Patent System (1925); Epstein, Industrial Research: Heroic or Systematic, 40 Q. J. Econ. 232 (1926); Kahn, Fundamental Deficiencies of the American Patent Law, 30 Am. Econ. Rev. 475 (1940); Ogburn and Thomas, Are Inventions Inevitable?, 37 Pol. Sci. Q. 83 (1922).

[179] See Simons, op. cit. supra, note 152.

[180] While generally in sympathy with some type of compulsory licensing law, Fortune has suggested that the system "ought to contain special safeguards for the protection of the small, rising enterprise." War and Peace and the Patent System, 26 Fortune 138 (Aug., 1942).

vides instead that any use of a patent, "*including any failure or refusal to grant licenses thereunder which has the effect of unreasonably limiting the supply of any article in commerce or of unreasonably excluding the supply of any article from commerce is hereby declared to be illegal.*" Similar provision is made for price-fixing, and forfeiture of misused patents is also provided for. Since provision is made in section 28 for filing all transactions relating to patents with the Antitrust Division, and in section 30 for opinions by the Attorney-General with respect to all such transactions, the chances are, at least under the present administration, that the position of new businesses would be sympathetically viewed if they entered into no restrictive agreements.

But this feature, which renders the Voorhis Bill immune to the strongest argument against a general compulsory licensing scheme, simultaneously leaves it open to objections of what seem to be a more important character. For one thing, the bill embodies all the slippery uncertainties with which the Supreme Court has greased the originally vague Sherman Act. Speaking of "unreasonable limitations on supply," and "unreasonable exclusions" of patented devices from markets, the bill seems to be playing an old game with the Supreme Court, which erected the rule of reason to salvage the Sherman Act from the limbo where, perhaps, it should have been consigned in the beginning.

It should be noted, furthermore, that tying the patent law to the antitrust laws calls upon the Antitrust Division to depart considerably from its purely prosecutorial role; under the Voorhis Bill, the Antitrust Division assumes to a large extent the character of a regulatory commission. Like the I.C.C., F.C.C., F.T.C., or C.A.B., it would be called upon more and more to prejudge business transactions, and to decide in some cases whether new businesses ought to be established. Its duty to render advance judgment on proposed patent uses distorts the "prosecutorial attitude"; an organization which has approved, perhaps recommended, a particular use, is not in the best position to find its faults. The businessman commonly complains that government agencies know too little of the businesses they regulate. It may be that they know too much.

If as a nation we are concerned with pursuing a policy of free competition, the Voorhis Bill has much to recommend it. Providing means whereby many of the restrictive features of the patent system could be eradicated, it would at least pull many of the fangs, even if it did not kill the serpent. In going only so far, however, it might create as many evils as it destroyed. As long as the patent system exists, there must of necessity be disputes over invention, and with the increasingly rapid technological

development which can be expected, the disputes will probably multiply. For this probability the Voorhis Bill offers no remedy except that the Antitrust Division is made a necessary party to all such litigation. Under the bill, patent suits would thus become more complicated than ever; already burdened with a tremendous job, the Antitrust Division would acquire an even greater load; patent-antitrust suits, already full of imponderables, would become more so. The policing job would be immense. The job of figuring out reasonable royalties on a national and pan-industrial scale would be staggering. The Voorhis Bill is no doubt designed to render antitrust policy more effective. A far more practicable way to do that, though less feasible perhaps as a matter of politics, would be to abolish the patent system. Another recent legislative proposal may be studied profitably with this last suggestion in mind.

SENATE 702—THE KILGORE BILL

Senate 702, introduced by Senator Kilgore in February, 1943,[181] was a bill concerned directly with the encouragement and stimulation of science and invention. Denounced flatly by some as deplorable evidence of the "collectivism in the air," the Kilgore Bill had two separable purposes: in general to create a coherent program of technological development, and in particular to safeguard the United States as a nation by providing machinery with which its technological know-how might be assessed and utilized in a fruitful and efficient manner during national emergencies. The best way to meet the name-calling is to quote the statement of policy and purposes of the bill, and to sketch the means it proposed:

DECLARATION OF POLICY

Section 1. The Congress hereby recognizes that the full development and application of the Nation's scientific and technical resources are necessary for the effective prosecution of the war and for peacetime progress and prosperity, and that serious impediments thereto consist in—

the unassembled and uncoordinated state of information concerning existing scientific and technical resources;

the lack of an adequate appraisal, and the unplanned and improvident training, development, and use, of scientific and technical personnel, resources, and facilities in relation to the national need;

the consequent delay and ineffectiveness in meeting the urgent scientific and technical problems of the national defense and essential civilian needs;

the trend toward monopolized control of scientific and technical data and other resources with lack of access thereto in the public interest; and

the absence of an effective Federal organization to promote and coordinate, in the national interest, scientific and technical developments.

[181] 78th Cong., 1st Sess.

The purposes of this Act accordingly are—

1. to appraise the current use of scientific and technical knowledge, facilities, and personnel, and to develop comprehensive national programs for the maximum use of science and technology in the national interest in periods of peace and war;

2. to mobilize for the prosecution of the war all scientific and technical facilities and personnel;

3. to facilitate after the war the transition of the national economy from the tasks of war to peacetime enterprise;

4. to assemble, coordinate, and develop for use, in the public interest, all scientific and technical data and facilities; to facilitate access to scientific and technical information and literature and to aid and encourage the writing and publication thereof;

5. to promote the full and speedy introduction of the most advanced and effective techniques—for the benefit of agriculture, manufacturing, distribution, transportation, communication, and other phases of productive activity; for economical and efficient Federal, State, and local government; and for the national defense and general welfare;

6. to aid, encourage, and protect the research and enterprise of inventors, scientists, technicians, scientific and educational institutions, research laboratories and Government establishments engaged in scientific and technical work, and to make their resultant discoveries and data more readily available, and without discrimination, to all sections of industry, agriculture, and the public, in order to aid the war effort at the present time and in order to promote full employment and higher standards of living after the war;

7. to discover and develop substitutes for strategic and critical materials, and to promote the most beneficial use of agricultural, mineral, and other natural resources;

8. to promote interest in scientific and technical education, and to provide for all qualified persons the means of scientific and technical training and employment;

9. to provide guidance in scientific and technical matters to the President, the Congress, and all Federal, State, and local government agencies and establishments, and to contribute guidance and, in all proper cases, financial and other assistance to solution of the technical and scientific problems of industry, agriculture, and of any agency or establishment or individual inventor;

10. to promote the maintenance and expansion of free enterprise by making available to smaller businesses the benefits of scientific advancement;

11. to standardize, when in the public interest, scientific and technical designs, practices, and specifications; and

12. to establish a national scientific and technical office to assure maximum cooperation and integration of the facilities and personnel of governmental and private agencies, institutions, and employers for the above purposes, and to coordinate the activity of these facilities and personnel, where necessary, in the national interest.

To accomplish the purposes of the bill, an office of scientific and technical mobilization, with an initial appropriation of $200,000,000, was to be set up under a single administrator compensated at the rate of $12,000

per annum. The president was to appoint, besides the administrator, six members of a national scientific and technical board—one representative each for industry, agriculture, labor, and the consuming public, and two members at large "who shall be scientists or technologists"—each to be paid $10,000 annually. "The Board and its several members," the bill provided, "shall perform such duties under the direction and control of the Administrator as he may assign to them; they shall have access to all information of the Office relating to the Administration thereof." Besides this board, the bill provided for a policy-forming committee composed of the board plus additional representatives for technology, management, labor, the consuming public, and such federal departments as the President should designate. This committee, serving without pay, was directed to meet regularly, not less than once a month, "to advise and consult with the Administrator . . . . upon the basic policies governing the administration of [the bill]."

In peacetime, the office was to have no power to command personal or other services; its power would extend to taking censuses of science, extending to facilities, requirements, and personnel, and to the formulation and promotion of specific projects, presumably on a free contract basis. In wartime, the office was to have the customary draft powers, restricted, however, to technical and scientific personnel and facilities. War and peace were bridged by the census-taking function and the cumulated experience gained in working on specific projects. It seems unnecessary to discuss the desirability of a continuing coordinating agency, such as the bill proposed, for war purposes. The "scientific" character of modern warfare has its own persuasiveness.

The weakness of the Kilgore Bill, as an attempt to free the nation's scientific and technological resources in peace as well as in war, is that the institution it proposed had to be accommodated to the patent system. Instead of going the whole way and giving science and technology the completely open field in which they develop most fruitfully, the bill proposed a freedom of science only in the interstices of the patent system. Given the authority to establish research projects, to endow privately conducted research, to serve as a clearinghouse of scientific and technological information, and to carry new technics through the early, difficult phases of development by the erection of pilot plants, the organization proposed in the Kilgore Bill would fill in whatever gaps in research and invention might result from the abolition of the patent system.

The bill operated on the assumption, however, that the patent system is to be maintained. If the bill became law without abolishing the patent

system, the function of the office would be limited and its operation exposed to obstructing conflicts with private organizations seeking patent protection. The office could scarcely expect to serve so effectively as a clearinghouse of technological development as it might in the absence of the patent system. Conducting research with a view to patent protection, private organizations could scarcely be blamed for withholding information; and efforts on the part of the office to secure information would create only friction. Charges of bureaucratic snooping and bungling could be expected in large volume. There is something unlovely, too, in the fact that the office would probably be engaged often in patent disputes. Its work would inevitably intersect that of private organizations, even though the patent system stood between them to draw a dividing line of mutual intolerance, and the consequent disputes would heighten the present insanity of distrust between "business" and "government."

In the absence of the patent system, however, the trend would in all probability be just the other way. Private research organizations, which would continue as necessary elements in any firm faced with the necessity of meeting competition, would find their interests served by an organization such as the Kilgore Bill proposed. The office would provide a reservoir of researches and ideas, open to all, from which individual firms could draw, and upon which they could build. A relationship profitable to both might be established between the universities and the Government. Science might flourish, and an era of competition in excellence ensue.

Having to adjust itself to the patent system was probably responsible, finally, for the lack of clarity in the over-all conception of the bill. Were there no patent system to cope with, the function of the office would be simple in basic character, though comprehensive and challenging in scope. The administrator would be required simply to do the best he could to promote the progress of science and useful arts. Based on the prevailing conception of the inevitability of conflict, however, the bill provided for the stock pressure groups, committees, and boards. And not only would the underpaid administrator have been required to cope with the groups, committees, and boards; the bill further required him to exercise a considerable amount of care in disposing of the patents which he would presumably have had a good deal of trouble in acquiring. Authorizing the administrator to issue nonexclusive licenses on patents he acquired, the bill also called upon him to render a difficult and inappropriate judgment: "No such license," the bill stated, "shall be granted unless the Administrator shall first be satisfied *and shall find that no monopoly, monopolistic practice, or unfair competitive advantage will be promoted thereby.*"

The truth of the matter probably is that the patent system will always cause trouble. Though "general semantics" has been invoked recently to correct some of its absurdities,[182] and though specifics such as the objective test of patentability or the single court of patent appeals may be submitted from time to time to patch up the system, its faults lie too deep for remedy.

Established to promote the arts and sciences, the patent system's most significant effect has been to create conditions which tend to inhibit progress of any kind. The patent system has been hailed as the guardian and protector of the individual inventors when, as a matter of fact, it has helped to create conditions wherein all individualism is becoming more and more difficult. Stoutly defended on the score that it aids in the establishment of new businesses, actually the patent system has operated to frustrate enterprise. People have unblushingly said that the patent system is largely responsible for America's industrial might. As the creator of monopolies and cartels, on the contrary, the patent system may be called, with more respect for fact, a potential hemlock draught for America. Technological progress of a kind has occurred, indeed, while the patent system has been in operation. At the same time, however, monopolies, cartels, and restrictive practices of other types have flourished, to cancel the social good possible in technological advance. The wealth created by the patent system, if any, deserves Carlyle's remark: "It is an enchanted wealth; no man of us can yet touch it." A causal relationship between the patent system and the restrictive practices can be proved. No causal relationship between our self-praised industrial progress and the patent system can be proved, however. The strength of America lies in its physical endowment, its people, and the energy liberated by its air of freedom. To attribute this strength to the patent system is a misrepresentation, based on sheer faith, and useful only to distort immensely important issues.

If we are concerned with promoting scientific and technological progress, and if we are concerned with approximating the conditions of free and competitive enterprise, a simpler and more rigorously conceived version of the Kilgore Bill might help. But a less superstitious eye should be focused on the patent system, that institution which combines the worst features of both sacred cow and white elephant.

The patent system, at least as it is organized at present, should be abolished. There is neither justice in nor necessity for giving monopolies in products emanating, as most inventions do, almost imperceptibly from the social process; especially when the recipient of the monopoly may have

[182] See Kent, General Semantics and the Patent System, 27 J.P.O.S. 37 (Jan., 1945).

become entitled to it (legally) only through an unequal bargain with an actual contributor. A stimulus to invention and improvement will exist so long as people have unsatisfied desires, and so long as men are creative animals. If a fear should remain, however, that invention will cease without extra stimulus, alternatives are available. The type of institution proposed in the Kilgore Bill would help inventors directly, and since it would have no compulsory powers it is difficult to see what harm the institution could do (in the absence of a patent system). Cash awards for invention are another alternative. Less desirable because they would entail the difficult problem of valuing inventions, and the hopeless one of defining them, cash awards are nevertheless preferable to the present patent system. They would at least reward inventors directly, without tying up industry as the present patent system does.

APPENDIX

Patent Right

(A paper by Mr. J. Stirling, Esq., presented to the Glasgow Chamber of Commerce [186?]. Reprinted from the volume, *Abolition of Patents* (London: Longmans, Green, Reader, & Dyer, 1869).)

First: Patent-right cannot be defended on the ground of justice.

The object of a Patent-Law is to establish a "property in ideas": but this involves the double fallacy that thought can and should be appropriated. The end of all law is to ensure the universal freedom of human action. Hence the law of property secures to every man the product of his own labour. It gives to each an exclusive right to the material embodiment of his productive energy, to be possessed or alienated by him at will. But in so doing it leaves unrestricted the productive energy of every other man. The freedom of one (as represented by his property) is thus consistent with the freedom of all.

But thought cannot be appropriated. In thought there is no material product to be made the object of a proprietary right. There is no "thing" to be possessed or alienated. The law can only, therefore, give the exclusive use of an idea to one person by injuriously limiting the intellectual activity of all others. A Patent-right, therefore, is less a "property in ideas" than a monopoly of thought.

Again, a true right of property is universal in its application; it extends to the products of all industry, however humble. But it is instinctively felt, that a proprietary right applied to every individual idea would be essentially absurd. Patent-Law, therefore, is essentially partial in its application. It picks out certain favourite ideas, and confers on them an anomalous and oppressive privilege. There seems no good reason why the ideas of inventors should be especially favoured. An invention is a means to a special end, and should be recompensed by him who has the end in view. If any ideas deserve a public recompense, it is those general ideas whose application is of universal utility. But Patent-Law ignores the discoverer of general ideas, and while conferring rewards, at the expense of the community, on empty schemers and puffing tradesmen, it passes over the services of a Newton or an Adam Smith. The law of Copyright, indeed, gives to the philosopher a right of property in his published and material works, but it leaves (most justly) his ideas to be used and elaborated by whoso can and will.

Again, Patent-Law is founded on a conventional, not a natural, right. It is not, like the ordinary law of property, based on an universal intuition of the human conscience, but it is one of those laws by which unwise legislators have striven so long and so vainly to give an artificial stimulus to human industry. Hence the arbitrary nature of its enactments. The ordinary right of property is unlimited in its duration—passing from generation to generation. But common sense revolts, instinctively, against a perpetual monopoly of thought. A Patent-Law, therefore, can never be more than a weak compromise with principle—the legislator undertaking to secure to the patentee his ideal property during the biblical term of seven or fourteen years. Now, if the inventor have a right at all, he has a right to more than this. To cut down a real and acknowledged right of property to seven, or even fourteen, years were a grievous wrong. Patent-right goes too far, or not far enough. Either a Patent is no right at all, or it is a right for all time. If ill-founded, it is a robbery of the public; if well-founded, of the patentee.

Mere priority affords no good ground for the exclusive right to an invention. The free exercise of thought is the common right of all. Wherefore if A excogitate a principle today, and B, by independent thought, excogitate the same principle tomorrow, both have an equal right to benefit by the discovery; and A has no natural right to debar B from the legitimate fruit of his intellectual effort. It may be even that A has no real priority of thought, but was only more knowing, more greedy, or was simply nearer to a patent office, and, though latest in arriving at the idea, was the first to secure a legal monopoly of its use. To found a right on such a race for priority is evidently irrational. The simultaneousness of discoveries and inventions by different minds, is a well-established fact in the history of science. Certain facts and reasonings, all tending in a given direction, are before the world. These act simultaneously on various minds, and produce in each the same development of thought. Now, with what justice do we pick out one of these many thinkers and give him a monopoly of the common thought? Nor is the injustice confined to the original idea, of which we grant a monopoly. By tying up one idea, we stop the whole course of thought in a given direction, and thus interfere generally, and to an indefinite extent, with the intellectual activity of other men.

The inventor benefits by the ideas of the community, and has, therefore, no right to a special privilege for his idea. The universal thought of mankind is a common good; all benefit by it freely, and all are bound freely to contribute to it. Every thinker owes an incalculable debt to society. The inventor has the benefit of all foregone human thought, of all existing civilization. He has the unbought advantage of all laws, all language, all philosophy. He has the free use of all the methods and appliances, spiritual and material, which have been painfully elaborated by the thinkers and workers of all time. Why, then, should he alone have an exclusive privilege, in respect of the infinitesimal addition which he may make to the work of ages?

Secondly: Patent-right cannot be justified on the lower ground of expediency. The object of a Patent-Law, in the supposed interest of the community, is to stimulate invention. But invention needs no artificial stimulus. Nature has amply provided all needful and wholesome encouragement, in the additional profit afforded by improved methods of production. In the natural course of business, every producer is spurred on by his material interests to invent for himself or to encourage the inventions of others. The whole history of industrial progress is an unceasing striving after improvement, with a view to profit. The few thousand patented inventions are as nothing compared with the innumerable improvements produced daily and hourly in the ordinary course of business, with the vulgar view of gain. The best stimulus to invention, therefore, will be found in the natural competition of producers; but Patent-Law destroys this competition by an unjust monopoly, and thus tends indirectly to weaken the natural impulse to improvement.

Invention may be even over-stimulated. In all her arrangements, Nature provides for a due equilibrium of powers and tendencies. Thus the various faculties and temperaments of man—the sanguine and the cautious, the speculative and the practical—are nicely balanced. The result, when things are left to themselves, is a happy combination of ingenuity and caution, and, as a consequence, a continuous but prudent course of improvement. But if, by conventional rewards, we give a factitious impulse to the inventive faculty, we destroy the natural equilibrium of capacities, and foster a scheming, fanciful turn of mind, at the expense of thoroughness and a patient working out of

sound ideas. This result has actually occurred in the United States, where the factitious value attached to invention has tended to produce an almost total sacrifice of solid workmanship to a flimsy ingenuity.

Patent-Law does not even attain its proposed end of quickening the progress of real improvement; on the contrary, it is found in practice seriously to hinder it, the monopoly granted to one inventor necessarily obstructing the progress of every other. Hence, an eminent inventor has lately said: "The advance of practical science is now grievously obstructed by those very laws which were intended to encourage its progress." That Patents seriously obstruct the natural development of ideas, is best seen by the sudden advance which usually follows the expiry of important Patent-rights. The natural course of improvement, dammed back by artificial obstruction during the continuance of the Patent, is set free on its conclusion, and a new impulse is given to the development of ideas and their practical application.

But the public is not the only sufferer by Patent-right. Without doubt the heaviest evil falls on the patentee. The inventor is led to give an excessive development to his talent, and is seduced into reliance on a law that can give him no substantial protection. The difficulty of defining original inventions is a practical bar to a satisfactory Patent-Law. The whole history of Patents is a long-continued story of litigation and disappointment; and the more admirable the invention, the greater is the certainty of difficulty and loss. It must be a worthless invention that the patentee is left to enjoy in peace. Whenever a Patent is worth pirating, the inventor may depend on being involved in a maze of litigation that disturbs his peace and ruins his fortunes. And the more the Patent privilege is extended, the worse the evil becomes; the intricacy and their multiplicity of details baffling every attempt to define the rights of competing inventors.

At this moment the heaviest complaints against Patents come from our great inventors. They repudiate the proffered privilege as "injurious to inventors," and complain of being "borne down by an excess of protection." As is natural, they who are most occupied with the advancement of invention, feel most acutely the grievous obstructiveness of the Patent-Law. Not enough that they have to battle with natural difficulties; at every step they meet obstructions which a well-meaning but perverse law places in their way. Nor do these obstructive privileges confer any real advantage on the empty schemers whose monopoly they establish: they merely give them the vexatious power of hindering the progress of better men. The mere "pen-and-ink inventor" has neither the energy, nor the perseverance, nor the practical ability to mature his crude "ideas"; but to this man the law awards the dog-in-the-manger privilege of effectually obstructing the natural progress of practical improvement.

These practical evils the advocates of Patent-Law do not deny; but they attribute them to the defective execution of the law, not to its vicious principle. Hence a never-ending cry as in the case of all bad laws, for more legislation, for more stringent regulation, for stricter investigation, and more thorough registration of Patents. But no tinkering at details can avail. The whole system is radically unsound; and the only effectual remedy is to lay the axe to the root.

A sentimental plea in favour of Patent-right has been set up by some, on the ground that the inventor—the man of thought, as he is called—must be saved from the toils of the capitalist, ever ready to prey on his superior intellect. This silly sentimentalism could only originate in an utter ignorance of the relations which naturally subsist be-

tween capital and talent. The capitalist is the natural ally of the inventor, whom it is his interest to employ and encourage. It is a chief part of the business of every producer to search out every one who can help him to improved methods of production; and the remuneration which, in one shape or another, it is the interest of the capitalist to offer to the really clever inventor, will always form a surer and more substantial reward than the delusive privilege of a legal monopoly. As to the complaints we hear of neglected talent, we may safely conclude that they arise more from the exaggerated pretensions of conceited schemers, than from any obtuseness to their own interests on the part of practical men of business, who refuse to profit by their inventions.

On the whole, Patent-Law seems a blunder, founded on the antiquated notion of giving State encouragement to certain favoured modes of human activity. It is no part of the duty of the State to stimulate or reward invention; the true function of Government is to protect, not to direct, the exercise of human energy. By securing perfect freedom to each individual, we shall best provide for the progress of the community; nor can any law be conceived more detrimental to the common weal than one which lays restrictions on perfect freedom of thought.

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COMMENT AND CASE NOTES

WHAT CONTRACTS TO GIVE A TRUST RECEIPT ARE EQUIVALENT TO TRUST RECEIPTS?

DWIGHT A. POMEROY*

When attempting to ascertain what contracts to give a trust receipt have been made by the Uniform Trust Receipts Act[1] equivalent in all respects to trust receipts, one finds the terms of section 4(1) somewhat obscure, giving the impression that with respect to this question the statute needs clarification. As it stands, section 4(1) of the act appears to make some, but not all, contracts to give a trust receipt, which are part of trust receipt transactions, equivalent in all respects to trust receipts.

If the subsection is intended to specify certain contracts to give a trust receipt which may be part of trust receipt transactions, and to make them, but not the others, equivalent in all respects to trust receipts, then, of course, the subsection may be open to no criticism other than as to the wisdom of so doing. If, on the other hand, the subsection is intended to make all contracts to give a trust receipt, which are part of trust receipt transactions, equivalent in all respects to trust receipts, one may well question whether its object will be realized under the terms of the act.

Section 4(1) of the Uniform Trust Receipts Act provides:

> 1. A contract to give a trust receipt, if in writing and signed by the trustee, shall, with reference to goods, documents or instruments thereafter delivered by the entrustor to the trustee in reliance on such contract, be equivalent in all respects to a trust receipt.

If this subsection is intended to make all contracts to give a trust receipt, which are part of trust receipt transactions as provided in section 2 of the act, equivalent in all respects to trust receipts, it seems that the terms of the subsection are not consistent with such purpose. In the first place, the subsection does not appear to apply to contracts to give a trust receipt made in connection with trust receipt transactions which may arise under the circumstances described in section 2(1)(b) of the act.

Section 2 of the Uniform Trust Receipts Act in part provides:

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[1] 9 U.L.A. 665.

1. A trust receipt transaction within the meaning of this act is any transaction to which an entruster and a trustee are parties, for one of the purposes set forth in Subsection 3, whereby

(a) the entruster or any third person delivers to the trustee goods, documents or instruments in which the entruster (i) prior to the transaction has, or for new value (ii) by the transaction acquires or (iii) as the result thereof is to acquire promptly, a security interest; or

(b) the entruster gives new value in reliance upon the transfer by the trustee to such entruster of a security interest in instruments or documents[2] which are actually exhibited to such entruster, or to his agent in that behalf, at a place of business of either entruster or agent, but possession of which is retained by the trustee;

provided that the delivery under paragraph (a) or the giving of new value under paragraph (b) either

(i) [be against a trust receipt], or

(ii) be pursuant to a prior or concurrent written and signed agreement of the trustee to give such a writing.

According to section 2(1)(b), a contract to give a trust receipt may be part of a trust receipt transaction when the trustee has and retains possession of the instruments or documents, which are merely exhibited to the entruster, or to his agent in that behalf. Yet, under the terms of section 4(1), it appears that a contract to give a trust receipt shall be equivalent in all respects to a trust receipt only when it is made with reference to goods, documents, or instruments "*delivered* by the entruster to the trustee." Therefore, under such an interpretation, contracts to give a trust receipt which are part of trust receipt transactions involving circumstances described in section 2(1)(b), are not, under the terms of section 4(1), made equivalent in all respects to trust receipts.

It might be contended that the circumstances described in section 2(1)-(b), out of which trust receipt transactions may arise, constitute in effect a pledge of the instruments or documents by the trustee, and a surrender of the pledged instruments or documents by the entruster to the trustee; and that the statute has merely eliminated, as needless acts, certain steps in the procedure. Under such an assumption, the surrender of the instruments or documents by the pledgee could be deemed a delivery of the instruments or documents by the entruster to the trustee, thereby meeting the requirements of section 4(1). If, however, such an interpretation is necessary in order that all contracts to give a trust receipt which are part of trust receipt transactions will be deemed equivalent in all respects to trust receipts, the need for clarification is at once obvious, for it not only calls unnecessarily for an interpretation of doubtful validity, but endan-

[2] It is immaterial for the purpose of this discussion whether, as here, the suggestion of the draftsman has been followed as to inserting "or documents."

gers uniformity of decisions, particularly in view of the fact that lack of delivery of the instruments or documents by the entruster to the trustee seems to be emphasized in section 2 of the act.

If section 4(1) is not intended to apply to contracts to give a trust receipt made in connection with trust receipt transactions under circumstances set forth in section 2(1)(b), but is intended to apply only to such contracts made in connection with trust receipt transactions under circumstances set forth in section 2(1)(a), it seems that the terms of the subsection are even inconsistent with this limited purpose. It appears that section 4(1) makes some of the contracts to give a trust receipt, but not all, which are part of trust receipt transactions as described in section 2(1)(a), equivalent in all respects to trust receipts.

According to Section 2(1)(a), contracts to give a trust receipt may be part of trust receipt transactions when goods, documents, or instruments are delivered by "the entruster *or any third person*" to the trustee. Yet, under the terms of section 4(1), it appears that contracts to give a trust receipt are deemed equivalent in all respects to trust receipts only when they are with reference to goods, documents, or instruments "delivered *by the entruster* to the trustee." Therefore, under such an interpretation, contracts to give a trust receipt which are part of trust receipt transactions when, as provided in section 2(1)(a), goods, documents, or instruments are delivered by a third person to the trustee, are not, under the terms of section 4(1), made equivalent in all respects to trust receipts.

If section 4(1) is not intended to apply to contracts to give a trust receipt which are part of trust receipt transactions when made in connection with circumstances described in section 2(1)(b) and when made in connection with a delivery of goods, documents, or instruments by a third person to the trustee, as described in section 2(1)(a), but is intended to apply only to such contracts when, under section 2(1)(a), a delivery of goods, documents, or instruments is made by the entruster to the trustee, it seems that the terms of the subsection are even inconsistent with this more limited purpose. It appears that section 4(1) makes some of the contracts to give a trust receipt, but not all, which are made when, under section 2(1)(a), there is a delivery by the entruster to the trustee, equivalent in all respects to trust receipts.

According to section 2(1)(b)(ii), a trust receipt transaction may arise, provided the delivery described in section 2(1)(a) be "pursuant to a prior *or concurrent* written and signed agreement of the trustee." Yet, under the terms of section 4(1), it appears that contracts to give a trust receipt shall be equivalent in all respects to trust receipts only "with reference to goods, documents or instruments *thereafter* delivered by the entruster to

the trustee." Therefore, under such an interpretation, contracts to give a trust receipt made concurrently with the delivery of goods, documents, or instruments by the entruster to the trustee, are not, under the terms of section 4(1), made equivalent in all respects to trust receipts.

Both Illinois[3] and Indiana[4] have made alterations in the phraseology of section 4(1) of the Uniform Trust Receipts Act. These changes do not, however, clarify the meaning of the subsection with respect to the points here raised. It seems that they are also open to the objections that they make contracts to give a trust receipt equivalent in all respects to trust receipts, when they are with reference to goods in the trustee's possession, which apparently includes "old possession," as distinguished from "new possession," with which the Uniform Trust Receipts Act is presumed to be concerned.

If section 4(1) is intended to make all contracts to give a trust receipt which are part of trust receipt transactions as provided in section 2, equivalent in all respects to trust receipts, it seems that the subsection should read:

1. A contract to give a trust receipt, if in writing and signed by the trustee, shall, with reference to goods, documents or instruments *concurrently or* thereafter delivered by the entruster *or any third person* to the trustee, *or with reference to instruments or documents exhibited to the entruster, or to his agent in that behalf, who gives new value to the trustee,* in reliance on such contract, be equivalent in all respects to a trust receipt.

It would be much better, however, if section 4(1) were changed to read simply and clearly as follows:

1. A contract to give a trust receipt, if made as part of a trust receipt transaction as described in Section 2, shall, with reference to such goods, documents or instruments, be equivalent, in all respects to a trust receipt.

If section 4(1) is not intended to apply to contracts to give a trust receipt which are part of trust receipt transactions under circumstances described in section 2(1)(b), it seems that the subsection should be changed to read:

1. A contract to give a trust receipt, if in writing and signed by the trustee, shall, with reference to goods, documents or instruments *concurrently or* thereafter delivered by the entruster *or any third person* to the trustee in reliance on such contract, be equivalent in all respects to a trust receipt.

Here, also, it would be much better if section 4(1) were changed to read simply and clearly as follows:

1. A contract to give a trust receipt, if made as part of a trust receipt transaction under circumstances described in section 2(1)(a), shall, with reference to such goods, documents or instruments, be equivalent in all respects to a trust receipt.

[3] Ill. Rev. Stat. (1943), c. 121½, § 169. [4] Ind. Stat. Ann. (Burns, 1933), § 51-604.

If, in addition to the foregoing limitation, section 4(1) is intended to impose two other limitations on contracts to give a trust receipt deemed to be equivalent in all respects to trust receipts, by making a distinction between the entruster and a third person with respect to delivery of goods, documents, or instruments, and by making a distinction between prior and concurrent contracts to give a trust receipt, which are part of trust receipt transactions, the terms of the subsection seem to be consistent with such purpose. Yet, there may be courts who, seeing no reason for making some, but not all, contracts to give a trust receipt, which are part of trust receipt transactions as prescribed by section 2, equivalent in all respects to trust receipts, will interpret the subsection contrary to this assumed object. Therefore, in order to avoid lack of uniformity of decisions, it would perhaps be better if a word or phrase be inserted to indicate that the limitations were not unintentional. For example, the insertion of "only" before "with" in section 4(1) might be sufficient to make it clear that the three apparent limitations in the subsection were not the result of inadvertence or oversight.

BOOK REVIEWS

Crime and the Human Mind. By David Abrahamsen. New York: Columbia University Press, 1944. Pp. xii, 244. $3.00.

For some years now, I have been watching a certain judge in action. Whenever he peppers his remarks with tirades, it is a dead give-away that he is going to find in favor of that particular lawyer to whom his outbursts are directed. I find myself very much in the same position. Before I can get myself to set down words of praise for the painstaking efforts, the consummate skill, and astounding erudition embodied in this small volume called *Crime and the Human Mind*, I am impelled first to rid myself of a catalogue of its defects, as I see them.

It is indeed nice to think of criminology as a science. But isn't such thinking really wishful thinking? Criminological knowledge will be of such a nature as to be really termed "scientific" some day, but to maintain that it is such today is an overstatement. The positiveness of this assumption by the author robs the many verities contained in the book of a genuine ring.

A glaring example of the difficulties which the author gets himself into by assuming that criminological knowledge is scientific is the formula for crime, which reads $C = (T + S)/R$. In this formula C represents crime, T represents antisocial tendencies, R represents resistance to such tendencies, and S represents the situation or setting. It is understandable that T and R are in a reciprocal relationship and therefore can be mathematically expressed by the numerator and the denominator of a fraction respectively. When Dr. Abrahamsen drags S into this fraction, he is getting himself into a good deal of trouble. The temptations to translate abstractions into concrete mathematical formulae are alluring enough but very treacherous. If S has to be included in the fraction, wouldn't it have been nearer the truth to make S a times relationship rather than a plus relationship? Thus the formula would read $C = (T \times S)/R$. If the situation continues to be innocuous or neutral, then S would approximate zero and the possibility for ciminal conduct then would become nil. If, however, the situation were loaded with high potentialities, wouldn't the times relationship represent its explosiveness much better? Dr. Abrahamsen might have known the danger of such a formula, if he could recall the fate of one, Otto Weininger, who attempted to write a mathematical equation for Love. This bizarre attempt by Weininger has been the source of scientific ridicule ever since. It would be interesting to speculate how the author would expand his formula, if he included the other veriables, such as time and geography, as he suggests in chapter iv.

It is nice to write about crime and to be the author of a book about crime, but it is well to remember in chapter iv what has been said in chapter ii. The author states "possibly crime is a compromise, representing for the individual the most satisfactory method of adjustment to inner conflicts which he cannot express otherwise. . . . . The same mechanism may take place in a psychosis where the person's delusions have a compensatory character and satisfy his inner strivings and needs." All of this is quite understandable but might reconcile that thought with the statement on page 59, in

which the criminal is likened to a child, who knows no restraint and is, therefore, uncompromising. "The criminal, then, acts as a child would—if the child were permitted to. One might very well imagine what would occur if a man acted out all his wishes, fantasies and drives. He would behave explosively, feel omnipotent, never love. He would swallow ravenously or destroy rapidly what he saw and kill with avidity. This may seem an absurd description, and yet it is only a reflection of what might happen, mutatis mutandis, in a criminal or what actually happens in a child's feelings." Well what is it then? Is a criminal a compromising or uncompromising individual?

As an etiological factor in crime causation, Dr. Abrahamsen very rightly points out, the criminal career is often an over-compensation for an organic physical defect. But, strangely enough, he does not mention the name of Alfred Adler (whose contributions along this line have become classical). A strange omission, in view of the avalanche of names and references with which this book is studded, and the meticulousness with which the author gives credit elsewhere where credit is due. Can this be solely from a loyalty to Freud? The author seeks to give the impression that his chief sources of inspiration were three: (1) Freud, the analyst; (2) Malinoswki, the social anthropologist; and (3) Monrad-Krohn, the neurologist. Very little of the influence of these latter two can be noted, and if the book can be said to have a leitmotif, that would surely be Freudian psychoanalysis. Somehow or other, I get the impression that analysts would not agree too much with what he discloses. He seems to tilt the analytical lid to outsiders, very much in the nature of a free Mason, who is surreptitiously handing out bits of free Masonry to an alien world.

My objection to the book reaches its climax in a consideration of those portions in which the author, assuming a Gargantuan pose, attempts to envisage crime in a global sweep, and I particularly react unfavorably to his appraisal of the American Crime Scene, inasmuch as he has come to these shores from Norway not too long ago. For example, he explains the high incidence of homicide by firearms in America to its rapid development and as a hangover from its frontier culture. In this error he probably takes his cue from Franz Alexander. When he talks about crime in our South, he naïvely wishes to correct situations and attitudes which a Civil War could not alter too much. His generalizations about crime in Australia and Japan appear to be equally fallacious. Australia, which he cited as having a similar pioneering history to the United States, and therefore, should have a relatively high incidence of homicide by firearms, is at the same time pointed out as a country of low incidence of homicide by firearms. It is certainly a naïve explanation to relate the low incidence of homicide in Japan to the escape mechanisms of hara-kiri.

Enough of pointing out defects, and now to point out the excellent contributions of this book. The erudition of this writer is unquestionable. His sincerity and wholeheartedness pulsate in every page. One marvels at his command of the language, and certainly at no time does he seem to want for words to express the thoughts which crowd his mind and the pages of this book. He is basically a humanitarian, which is in no way better illustrated than in his criticism of the manner and places in which psychiatric examinations are sometimes held.

Being a psychiatrist, he clings to the belief that a psychiatric examination could only be trustworthy, if held under optimum conditions, although he states that it is not up to the psychiatrist to determine the setting for this examination, but rather for the courts. But, if the psychiatrist is forced to conduct an examination under adverse cir-

cumstances, the psychiatrist should say so, or, as he puts it, "If the examination was unsatisfactory because made under unfavorable conditions, the psychiatrist must point this out in his testimony."

I am grateful to him for pointing out that Kraepelin, the founder of modern psychiatry, was deeply interested in forensic psychiatry, a fact not known or appreciated by the general psychiatrists, who snub and occasionally turn up their noses at psychiatrists who labor in courts, prisons, and jails. I am grateful to him for pointing out that Lombroso's contributions, now looked askance at, are still valid, because even though Lombroso was wrong in his explanations, he deserves credit for being one of the first to point out that criminal conduct is very often related to abnormal mental states. Lastly, we must give the author credit for setting down in these few pages the vast panorama of crime, and I like particularly his plans for future trends in the study of crime, that will make criminology a science, such as altering criminal careers through shock therapy, etc.; and therefore we must forgive him his overenthusiasm, if he already speaks of it as having arrived at such a stature at this early date.

D. B. ROTMAN*

Parliamentary Representation: A Survey of Our Methods of Obtaining Members for Parliament and an Analysis of Their Results. By J. S. F. Ross. New Haven: Yale University Press, 1944. Pp. 245. $3.00.

In this book Mr. Ross has dealt with a fundamental political problem. He has undertaken to analyze the composition of the British Parliament from 1918 to 1935 by careful statistical methods and by taking into account a well-nigh overwhelming wealth of facts. As the author himself says, "the book, planned and commenced in March 1933, represents the results of nearly ten years of detailed investigation and thought." Its results are startling and interesting, and future students of the problem of parliamentary representation will have to read and weigh it with careful attention. They will benefit by it, even if they may not be able to agree with its basic conceptions and conclusions.

Some of the more striking facts should be mentioned. It has been shown that the average member of the House of Commons between 1918 and 1935 was about eight years and seven and one-half months older than the average adult in Great Britain and even twenty years older than the average member of the whole population. We also learn that more "public school" members are returned to Parliament than members of the secondary and elementary schools together, and that, among the public schools, Eton and, to a little less degree, Harrow play a specially important part. "The Harrovian has over 1,800 times and the Etonian well over 2,000 times as good a chance of entering Parliament as has the elementary boy." Comparable with the preferential position of public schools is that of the universities. The two ancient universities, Oxford and Cambridge, hold a dominant position, and can claim nearly 30 per cent of all members of Parliament. Further, the occupational representation of the House of Commons does not correspond to the occupational structure of the country. Certain occupations, like those of lawyers, company directors, and trade union officials, are greatly overrepresented, and alone provide more than half of the membership in Parliament, while

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other occupations are either not represented at all (e.g., the "unpaid domestic workers") or are only quite inadequately represented in it (e.g., the "rank and file workers"). Finally, there is much too big a proportion of members who belong to the aristocracy. The holders of hereditary titles and their near relatives, who form only a tiny minority of the population, are represented in the House of Commons out of all proportion to their due share. As Mr. Ross makes clear, this element has at least 400 times the representation that it would have on a proportional basis.

The conclusion drawn from this is that the House of Commons is largely recruited from the "upper classes" of the community, i.e., from those sections which are privileged, if not by birth, then by property or education. These strata have been able to secure for themselves an abnormal share of the membership of Parliament. Above all, the high costs of contending an election have put them in a position to dominate the political life of the community.[1]

The result of the survey is not surprising, if we bear in mind that as early as in the seventeenth century in England parliamentary representation had taken on an outspokenly aristocratic and plutocratic character. We have not to show here in detail how this aristocratic and plutocratic character of parliamentary representation developed. It suffices to note that those who were not privileged by birth or means and had thus "no stake in the country" were not entitled to vote far into the nineteenth century. The fight that followed the Reform Bill of 1832 was not, as has been frequently said, a fight between aristocracy or plutocracy or both, on the one hand, and democracy on the other, but rather a fight between aristocracy and the capitalistic middle class, which made its bid for political power. The legal change brought about in 1838 meant only that personal for landed means were required for members of Parliament. Even when Bismarck drafted his new constitution for the North German Confederation and introduced the universal, equal, secret, and direct franchise for the new federal state a basic change in the political and sociological structure of the country had not yet taken place. Great Britain was ruled by a society in which property was the presupposition of the integration of the individual into the social and political system of parliamentary representation. Even today, as we have seen, the democratic Parliament is still dominated to a great and even abnormal extent by the privileged upper classes of society. We may add that certain anomalies of the electoral law in its present form point in the same direction. Above all, the special provisions for the representation of the universities and for business premises have a plutocratic effect by providing certain sections of the wealthier classes with a double vote.

But this is not the whole picture. The final and perhaps most important point stressed by Mr. Ross is that under the majority-vote system the general elections have become to a greater or less degree a "gamble" in Great Britain. We know that a majority-vote system has the general tendency to lead to a concealed plural voting in favour of the stronger political parties. This tendency has had the effect of causing the average House of Commons during the twenty-three years from 1918 to 1941 to contain, in round figures, ninety-six more Conservatives, thirty fewer Liberals, and sixty-two fewer Labour members than the respective voting strength would justify. In addition to that, as the result of the fact that in Great Britain the two-party system has developed

[1] It has been revealed by the author that in 1935 the average amounts of election expenses for contested elections were: for Conservative candidates £780, for Liberal candidates £520, for Labour candidates £360 (which were paid by trade unions or cooperative societies).

into a three-party system, a minority of voters can easily secure a majority of votes in Parliament. In fact, this was the case in Great Britain between the wars in the general elections of 1918, 1922, 1924, and 1935. Only in 1931 could the governments resulting from the general elections claim to have secured a majority of voters. In the general elections of 1914 the Conservatives were even able with a minority of votes in the contested constituencies to secure a majority of about 200 seats in the House of Commons (412 seats out of a total of 615), although they had only the support of 48 per cent of the voters, while, on the other hand, the Liberals secured less than 8 per cent of the seats although their voting strength was about 20 per cent.

It is obvious that those who hold the view that all currents of popular opinion among the electors ought to be expressed in Parliament, each in proportion to its numerical strength in the electorate, must come to the conclusion that the House of Commons fails completely to represent the people, since it does not reflect all the various sections of the population and of popular opinion. Indeed this is the conclusion at which Mr. Ross arrives in his analysis. According to him the electoral system prevailing in Great Britain does not produce a representative House of Commons at all, as in age, in education, in wealth, in occupation, in numerical strength, and in many other respects it does not mirror the true state of the people and its political feeling. In order to remedy these obvious defects and to make Parliament a representative body again the introduction of proportional representation (in the form of the single transferable vote system) is advocated by the author.

It is this main conclusion which needs challenge. Nobody who has carefully read Mr. Ross's survey can dispute the facts revealed in it. The fundamental question, however, is whether the proper meaning and nature of the representative-parliamentary system has been rightly understood by the author. He takes it for granted that a parliament can only be called representative in fact as well as in name, if it is a sort of miniature picture or microcosm of the nation. Therefore, all attention has been concentrated on the design of a proper electoral machinery. The point, however, is that it is not the only duty of a representative parliament (especially in countries which have adopted the parliamentary-government system) to balance all the various tendencies and opinions in the electorate and to mirror accurately the state of public opinion at a fixed time. No, parliament has also other functions to perform in these countries. In order to be vigorous and healthy it has to act not only as a representative body but also as an intermediate agent of government. As was already said in the Report of the Royal Commission of 1910: "The object of representative government is not only to represent but to govern."

The fundamental weakness of Mr. Ross's analysis lies in his dealing with the whole problem purely from the technical and logical point of view. He does not look at it as a matter of politics. But politics is no myth or metaphysics, as the author seems to assume. It does not disregard the facts. On the contrary, politics (and political theory which deals with politics) is related to, and reflected by, the facts. This does not mean that politics can be considered a simple annex of facts and a matter of only secondary relevance for the student of politics. Politics is much more. Politics performs a necessary function within the framework of the whole life of a community. It exists in its own right. It has a basis of its own. This explains why politics cannot be considered a sham or an ideological cloak for the nonpolitical forces of society. Of course, economic, or religious, or legal, or racial motives can enter the sphere of politics. Actually they do

so to a large extent. But by entering the political sphere an economic, religious, legal, or racial question, from the very fact of its being regarded politically, changes its essential peculiarity. Its former nature remains no longer the same. The question acquires a distinctively political character.

But to define the essence of politics we must try to describe it more accurately. We must realize that politics presupposes a relation to the state. It is this relation that distinguishes politics from policy. By policy we have simply to understand all kinds of guiding activities. We speak of the policy of an economic enterprise, of a trade union, of a union, of a family and so on. A relationship to the state is not presupposed here. But we cannot speak of politics without having the state (the modern form of the old polis) in mind. We cannot isolate it from the state.

This relationship of politics to the state must be defined in more detail, for there is a sphere within which the state can act nonpolitically. The state can make use of the same forces and the same means as a private person. The state can conduct an industrial enterprise, a coal mine, electric, gas, or water works according to the principles of a private undertaking and carry on business according to the principles of civil law. Even in cases in which the state exercises its proper functions it need not necessarily be acting politically. The judge, the university teacher, the civil servant in a constitutional state ought to act nonpolitically, in so far as they have to perform the functions allotted to them sine ira et studio and in an impartial manner.

A relationship to the state becomes political when, in one way or another, the fundamental principles upon which the state rests and which determine its specific character are affected. Those questions are political which seek to preserve the existence of the state or to further its unity, or aim at the integration of the social organism which we call the nation. The most important task of a statesman is to preserve "the national being," as Cromwell once said. A truly political spirit has, to use Gladstone's phrase, the "faculty of nation-making."

What we have to stress in the connection before us is that the representative-government system is a primarily political system and the concept of representation a primarily political concept, in the sense we have tried to develop. It is the political principle of representation which, within the framework of democracy (and beyond that, within a community), brings into existence the will of a nation as a political reality, notwithstanding the fact that it is only individuals who are acting for the community. The common will of a nation could not constitute itself and make the community capable of political action, if there were no representative authorities to weld together the motley multitude of conflicting particular wills into an individualized common will. Only thus can we also explain why the elected chief magistrates or members represent the whole people, and not only the majority, or minority, that has elected them.

From all this it follows that, within the framework of the representative system, the act of election has primarily to fulfil a political function. This means that it must further the unity and existence of the nation and help to integrate society into a community. This is why the act of election has the function of reducing the number of political issues and of achieving as great a consensus of opinion as possible. Under the classical representative-government system, therefore, the elections have to unite, rather than to divide, a country. It is this political function of the elections which forces the voter to take a political decision between a few clear-cut alternatives. It favours thereby the survival of only a few big parties and facilitates the formation of a stable government.

These highly political functions of elections explain why the majority-vote system is more in accordance with the representative-government system than is proportional representation. Under that system a genuine competition for political leadership is favoured. It presupposes a virile spirit between strong and capable political personalities. There we find the possibility for new men to fight their way through and to win the constituencies to new ideas. There we see creative discussion which politically enlightens the members of the constituencies and enables them to come to final decisions. There we observe action, decision, and victory. It is by this political character that the majority-vote system acquires its peculiarly vital and personal character and the act of election its special dynamic function.

On the other hand, in the case of proportional representation we are not concerned with politics and the political unification of the nation. The proportional system fulfils no specific political functions. What gives it its ideological power of attraction is the idea of justice. It is this idea which is infringed, if the franchise has not been extended to all sections of the population and if the various anomalies mentioned above have not been eliminated. This idea requires that each vote have not only an equal numerical value but also an equal effectiveness in determining the affairs of the nation. Here the vote is not only to be counted as one but also retains (as far as technically possible) its full value in the voting power of parliament.

If we try to define this idea of justice in greater detail we may say that the idea of justice invoked here has a mathematical-logical character. It is not by chance that the various plans for proportional representation were devised under the sway of utilitarian philosophy and that mathematicians played an important part in the propagation of the mechanical details of the proportional system. The more mathematically and logically exact the technical method of the calculation of the votes of the active citizens is, the more accurately does parliament reflect the various political opinions and divisions in the electorate. This is what Mr. Ross aims at. Here politics is simply conceived of in terms of arithmetic or geometry. This also explains why the proportional system has been aptly described as that of a mathematician rather than that of a politician.

It is owing to this effort to reflect justly all the various opinions and strata of the electorate with the maximum of mathematical accuracy, that proportional representation has taken on that unpolitical and impersonal character so typical of this system and all its contrivances. This character shows itself in many directions. Think, for instance, of the tendency of proportional representation frequently described in political literature to subdivide the big party organizations into new smaller groups. This tendency results in watering down the political feeling for the necessity of constituting a solid and lasting majority and of coming to a compromise, without which liberal democracy cannot function smoothly. Consequently, under proportional representation existing majorities tend to disintegrate, and the difficulties of forming a central government and of making a parliamentary-government system work well increase.

This does not mean that considerations of justice do not play their part within the framework of the representative-government system. No doubt they do, and do so especially in a democracy. In this context it may be noted that some of the "injustices" of the present electoral system in Great Britain have just been eliminated. Last year a Speaker's Conference on Electoral Reform and the Redistribution of Seats issued two white papers making a number of valuable proposals. Some of these recommendations have since been embodied in legislative acts. First, there is the Redistribution of Seats

Bill, passed by Parliament in October, 1944. It gives effect to the recommendation to subdivide abnormally large constituencies before the next general election and to redistribute the other parliamentary seats later. Second, there is the Representation of the People Bill of January, 1945, which has accepted other recommendations of the Speaker's Conference and has improved the present electoral law in a number of important technicalities.

But the idea of justice must not be allowed to undermine the political character of the representative-government system. This becomes quite clear if we bear in mind the history of the parliamentary franchise in which we find some electoral systems much more unjust than that in operation in Great Britain today—for example, the parliamentary franchise in the various European countries in the nineteenth century. Here the franchise was limited to a certain section of the population and was dependent on the possession of property and income. No doubt, measured by modern democratic standards such a franchise was highly unjust and its introduction today would not only be incompatible with modern democracy but also make a parliamentary body utterly unrepresentative. But this cannot prevent us from saying that in the nineteenth century this electoral system with its differentiation of the voters according to property, income, and education, fulfilled its functions in making parliament a representative body. In fact, the parliamentary-representative system worked better in the nineteenth century than it works today, although the modern franchise is much more democratic and just than the traditional plutocratic and educational electoral system of the nineteenth century.

The conclusion to be drawn from this is that the representative-government system does not, of necessity, depend on a just and democratic universal and equal franchise. What may be claimed (although even this can be disputed) is that "elections by the people" are necessary in order to make a parliamentary assembly a representative body. This explains why the "elections by the people" have been considered the most crucial element in the working of the classical representative system and why liberals of all varieties and in all countries, in the period of the rise of the classical representative system, described popular elections as part of the very being, and an essential condition, of the representative system, and denied the king the right to meddle in the constitution of the popular chamber, since this would destroy its representative character and would turn it into a branch of the executive. But beyond that the concept, "elections by the people," cannot be defined unequivocally. It can be filled with a varying content. The history of the representative-parliamentary-government system proves this fully. The only thing that can be said is that it reflects the universal trend from autocracy toward democracy and mirrors the general movement from a liberal representative minority rule based on property and education towards the people's state.

Therefore Mr. Ross's admirable survey needs supplementing by a solid theoretical inquiry into the political foundations of the parliamentary-representative-government system. Not before the idea and specific political functions of the principle of representation and especially of the parliamentary-representative system have been analyzed in greater detail will it be possible to come to a balanced judgment on the basic questions broached by the author. It is one of the most important tasks of political theory today.

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